School environment and children's mental well-being

A child psychiatric view on relations between classroom climate, school budget cuts and children's mental health

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Academic dissertation

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To my husband Mikko and our children
Axel, Petter, Oscar, Erik and Antonia

CONTENTS

1. ABSTRACT

The role of school environment on children's mental well-being was investigated. The course of teacher-reported internalising, externalising and comorbid problems over four years, from the second to the sixth grade, and the relationships between classroom climate and children's emotional and behavioural problems were studied. Also examined were the school budget cuts, as evaluated by teachers. These cuts were studied in relation to the classroom climate and the well-being of sixth-graders. The need for special services was studied in relation to personal and family factors, and the gap between need and supply of these services during the recession was investigated. Furthermore pupils' selection for special services was studied in relation to the same individual and social background factors as the need for services.

This study is a longitudinal extension of an epidemiological study of schoolchildren's mental-health problems initiated in the winter of 1989-1990 (Almqvist et al., 1999). The cohort (N=1320), representative of Finnish children born in 1981 and residing in Southern Finland, was followed up four years later in 1994. Teachers and pupils answered questionnaires at school.The analyses were based on teacher-reported data from both Time 1 (N=1284) and Time 2 (N=906) and student-reported data from Time 2 (N=1149). Teacher-reported data from both time-points were available for 861 (65%) students.

At Time 1, children's mental health was evaluated by teachers using a standardised RutterB2 questionnaire (Rutter, 1967), and at Time 2, by teachers and the pupils themselves using standardised questionnaires Teacher Report Form (TRF) and Youth Self Report (YSR), respectively (Achenbach, 1991a and 1991b). Teachers further reported on consequences of school budget cuts, measured as increased size of educational groups, reductions in material resources, decreased availability of psychological counselling and changes in teachers' level of motivation and stress. Teachers also evaluated the classroom climate and reported on pupils' academic achievement and their need for and access to special services. Pupils reported on how satisfied they were with their academic achievements, how interested they were in school subjects, and their parents'occupation and employment status.

The co-occurrence of internalising and externalising problems was found to be a particular risk for boys in primary school. Co-occurring externalising problems change the course of boys' internalising syndromes to an externalising direction over time, and the prognosis for these boys is poor. Comorbidity seems to be rarer among girls than among boys, but more research is needed on this issue. When comorbidity is excluded, it appears unlikely for pure internalising and pure externalising syndromes to develop into contrasting syndromes over time.

A poor sixth-grade classroom climate was related to an increase in emotional and behavioural problems in both boys and girls. Further, girls who were poorly adjusted in the second grade, particularly those who had externalising problems, were especially vulnerable to a poor classroom climate in the sixth grade. Earlier externalising problems seem to have left them more prone to act out if the classroom was restless and less constructive in early adolescence. Boys' behavioural problems in the second grade predicted both the climate in their classes and their behavioural problems four years later. Accordingly, boys' behavioural problems seem to affect their environment more strongly than girls'.

During the early 1990s reductions in human and material resources in Finnish schools were extensive. Budget cuts influencing human resources had more negative effects than material cuts, and increases in educational group size and cuts in psychological counselling were even reflected as an increase in girls' externalising problems. The classroom cli-

mate was negatively affected by larger group sizes. However, while the majority of teachers reported an adverse effect on their work situation, budget cuts did not affect pupils' self-reported interest in their schoolwork.

Special services, i.e. remedial instruction, special education and psychological counselling services, were severely impacted by budget cuts. A considerable gap was found between the need and supply of these services. The need for services was related to background factors. The selection process was biased against boys in remedial instruction and internalising children in psychological counselling, favouring pupils achieving well, who were motivated and had higher socio-economic status. However, children of unemployed mothers tended to have better access to educational special services.

Our findings support the importance of the school environment in children's mental well-being. Schoolwork happens in interaction with others, and thus, sufficient human resources in schools, in particular, seem to benefit pupils. More research is needed to increase our understanding about processes in the school environment. Because of the multitude of factors influencing children, these studies should combine aspects of educational, social, psychological and medical sciences.

2. LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following publications referred to in the text by their Roman numerals:

I. Somersalo H, Solantaus T, Almqvist F. Four-year course of teacher-reported internalising, externalising and comorbid syndromes in preadolescent children. European Child & Adolescent Psychiatry 1999;8,Suppl.4:89-97.

II. Somersalo H, Solantaus T, Almqvist F. Classroom climate and the mental health of primary school children. Accepted for publication in Nordic Journal of Psychiatry.

III. Somersalo H, Solantaus T. Consequences of economic recession to the learning environment and adjustment of sixth-graders in Finnish schools. Psychiatria Fennica 2000;31:126-136.

IV. Somersalo H, Solantaus T. Economic recession and inequality in education: children needing special services in focus. Scandinavian Journal of Educational Research 2001;45:233-248.

3. INTRODUCTION

School, an important developmental environment for children, is known to have an impact on children's psycho-social development (Rutter et al., 1979; Ouston et al., 1980) and mental health (Kasen et al., 1990). School and education are current topics of mass media, where matters such as quality of schooling and the importance of parents' engagement in their children's school work are emphasised. This thesis elucidates children's emotional and behavioural problems in the school environment by studying teachers' views of school budget cuts during a national economic recession and investigates the consequences of these cuts on the school environment, children's mental health and equality in education.

The demands placed on children are different in the school environment than in the home environment. Indeed, children's problems at school show a somewhat different spectrum than problems emerging at home (Offord et al., 1989; Verhulst and Akkerhuis, 1989). It is therefore important to study teachers' perceptions of children's emotional, behavioural and comorbid problems.

Schools are interactive social systems. During the last decades the climate in schools and classrooms has been an important focus of investigation. A good school climate has been found to predict not only superior academic achievement but also positive behaviour and high self-esteem (Rutter et al., 1979; Ouston et al., 1980; Hoge et al., 1990). A poor school climate, by contrast, has been reported to relate to pupils' stress and even psychopathology (Kasen et al., 1990; Havlínová and Schneidrová, 1995; Kuperminc et al., 1997). Furthermore, a positive classroom climate facilitates pupils' learning and adjustment (Haertel et al., 1981; Fraser and Fisher, 1982; Bryant et al., 1994; Cheng, 1994; Baker et al., 1998), while a poor classroom climate is associated with psychological problems (Kellam et al., 1994 and 1998; Klicpera et al., 1995; Russel and Russel, 1996; Mooij, 1999). As data concerning the relationship between the classroom climate and pupils' mental well-being are relatively scarce, this field presents an important area for child psychiatric research.

In the 1990s, Finnish society experienced a severe economic recession that also affected the school system. School budgets, which had expanded through the last decades, dropped to the level of 1980 in just four years during 1990-1994 (Kirjavainen, 1996). As a consequence, the student-teacher ratio in school classes increased and the availability of teaching material decreased (Saari and Kupari, 1996). Special services, i.e. remedial instruction, special education and psychological counselling, were also reduced (Meriläinen, 1996; Niemi and Ojala, 1996; Tuunainen and Ihatsu, 1996). These changes hampered the everyday life and work at school of both teachers and pupils. In this thesis, teachers' views on these changes are studied. Teachers, as education professionals, are assumed to be aware of the presence and severity of these changes in different fields of school life during the recession years. Their views on the effects of school budget cuts provide a means for studying consequences of the economic recession in the school environment.

4. REVIEW OF LITERATURE

4.1. History of school research from a child psychiatric view

4.1.1. Trends in educational policy

Compulsory education was legislated in Finland in 1921. Attainment of social and regional equality in education has been a major issue in school policy of Finnish school politics (Rinne and Vuorio-Lehti, 1996). Comprehensive school, which consists of nine years of compulsory schooling for all Finnish seven- year-olds, was introduced gradually between the years 1972 and 1977. These efforts to achieve educational equality were challenged in the 1990s by new trends in school policy, which emphasised the individuals' right of choice in educational matters (Volanen, 2001). At the same time, the responsibility for educational planning was shifted from government to community level and even to individual schools, which might increase regional differences. While the economic recession strongly impacted on Finnish society in the 1990s, very little empirical research is available on how children's mental well-being was affected.

In the 1960s and 1970s, there was a rising awareness also in the USA about unequal opportunities in education (Coleman et al., 1966; Jencks et al., 1972; Coleman, 1990). Children of racial minorities and from lower socio-economic classes were found to have poorer access to educational services and inferior academic success. The impact of school, on the other hand, was strongest on the most disadvantaged children (Coleman et al., 1966).

Preschool programmes were developed to support children living under disadvantaged conditions (Coleman et al., 1966). Two well-known American preschool projects are the Head Start Programme and the Perry Preschool Project (Zigler and Styfco, 1994). Head Start is an ongoing national intervention programme that provides comprehensive health, nutrition, mental health and social services for children and families in poverty. The Perry Preschool Project was an experiment that delivered preschool education to a limited number of these at-risk children between the years 1962 and 1967. The preschool programmes, which were offered pupils aged 3-5 years, were followed by the "Follow Through"-programme for children in early elementary grades (House et al., 1978) .These programmes have also been followed up longitudinally and have been found to benefit participants academically, socially, behaviourally and emotionally years after the intervention (House et al., 1978; Collins, 1984; Farnworth et al., 1985; Asano, 1986; Engelmann et al., 1988; Gersten et al., 1988; Zigler and Styfco, 1994). These findings indicate that school is, indeed, important for children's well-being.

4.1.2. Quality of school environment

The quality of education and school life in general is important for children's adjustment (Rutter et al., 1979; Ouston et al., 1980). Differences in achievements as well as pupil behaviour can be explained by school factors such as quality of school life, values held at school, management style of teachers and responsibilities given to children.

Awareness of the importance of educational environment has increased. Moreover, in recent years, efforts have been directed at creating healthy environments in general, including promoting health at schools (Weare, 2000a and 2000b). As reviewed by Weare, the health-promoting school approach attempts to shape the whole school context, which comprises such factors as

school climate and organisation and management structures so that the experience of school life contributes to the health of pupils and school staff. The Health Promoting School Project commenced in Europe in 1991, with Finland joining in 1993 (Jakonen et al., 2000).

4.2. Children's psychiatric problems and adjustment to school environment

4.2.1. Course of internalising, externalising and comorbid problems

Children's emotional and behavioural problems are commonly divided into two main groups, internalising and externalising symptoms. Internalising refers to problems regulating emotions and mood, and externalising to dysregulation of behaviour. Comorbidity is defined as the co-occurrence of two or more independent diseases or disorders (Caron and Rutter, 1991), and it often characterises children's psychopathology (Puig-Antich, 1982; Anderson et al., 1987; Kashani et al., 1987; Woolston et al., 1989; Cole and Carpentieri, 1990; McGee et al., 1990; Zoccolillo, 1992; McConaughy and Skiba, 1993). However, comorbidity is more difficult to conceptualise in child psychiatry than in somatic medicine, as disease entities are less clear cut (Rutter, 1997). At present, comorbidity is commonly accepted as a true phenomenon in developmental psychopathology (Kovacs et al., 1988; Rohde et al., 1991; Krueger et al., 1996; Newman et al., 1996; Rutter, 1997), and awareness about concurrent diseases has been rising in the 1990s (Caron and Rutter, 1991; Verhulst and van der Ende, 1993; McConaughy and Achenbach, 1994; Rutter, 1997).

Children's problems at school show a somewhat different spectrum than problems at home (Offord et al., 1989; Verhulst and Akkerhuis, 1989). This is understandable as different demands are placed on children in these two environments, and in line with this, teachers are known to provide unique information for evaluating the severity of children's psychopathology (Verhulst and van der Ende, 1991a). At school, children are expected to co-operate with their classmates and teachers in a group and to wait for their turn. In this environment, externalising problems may appear as truancy or bullying, while internalising symptoms may manifest as social withdrawal or anxiety. Children with co-occurring problems have both kinds of problems, which is likely to make their situation especially difficult.

Epidemiological studies show that the reported prevalence of childhood psychiatric dysfunction varies within the range of 3-39%, with a median of 12% (Verhulst, 1995). These figures indicate that emotional and behavioural problems are quite common in children. However, most previous works are based on parental and youth self-reports. Consequently, the following literature review is based on reports by different informants.

The findings on the stability over time of externalising and internalising problems are contradictory. According to many studies, externalising problems are more stable than internalising ones (Esser et al., 1990; Verhulst et al., 1990; Verhulst and van der Ende, 1991b; Offord et al., 1992; Verhulst et al., 1993), while other studies suggest little or no difference in stability (McConaughy et al., 1992; Verhulst and van der Ende, 1992a and 1992b; Verhulst and van Wattum, 1993; Ferdinand et al., 1995). When comorbidity has not been excluded, disorders are more likely to be of the same kind, rather than the opposite, at follow-up, i.e. externalising problems tend to predict later externalising, and internalising later internalising problems (McConaughy et al., 1992; Stanger et al., 1992; Orvaschel et al., 1995; Rubin et al., 1995). However, contradictory findings have been made as well, indicating that exter-

nalising and internalising syndromes may also predict the contrasting syndrome (Verhulst and van der Ende, 1991b; McGee et al., 1992; Offord et al., 1992). Nevertheless, "pure" internalisers rarely change into "pure" externalisers, and vice versa, when followed up over time (Verhulst and Althaus, 1988).

Little is known about the stability of comorbidity over time. However, there are indications that comorbidity tends to persist, as children with comorbid internalising and externalising problems scored in the deviant range on Achenbach's Child Behaviour Checklist total problem scale more often than children with respective pure disorders when followed up (Verhulst and van der Ende, 1993). Indeed, the outcome of comorbid disorders is often worse than the outcome of the components alone (Chiles et al., 1980; Kovacs et al., 1988; Harrington et al., 1991; Offord et al., 1992; Verhulst and van der Ende, 1993). Comorbidity between internalising and externalising disorders, especially between depression and conduct disorder, is usually related to a poor outcome (Marriage et al., 1986; Kovacs et al., 1988; Harrington et al., 1991). Increasing severity of antisocial behaviour, in turn, is associated with an increased risk of an emotional disorder (Zoccolillo, 1992).

The tendency of children's psychiatric disorders to improve over time is remarkably high according to epidemiological studies; between one half and two thirds seem to develop in the direction of recovery (Ghodsian et al., 1980; Esser et al., 1990; Verhulst and van der Ende, 1992b). In line with this, most disorders at a given age are new (Rutter et al., 1976; McGee et al., 1992). However, as mentioned above, children with both internalising and externalising problems constitute a group with a less favourable prognosis (Chiles et al., 1980; Kovacs et al., 1988; Harrington et al., 1991; Offord et al., 1992; Verhulst and van der Ende, 1993).

Scarce data on comorbidity in the school environment exist. However, McConaughy and Skiba (1993) have documented teacher-reported comorbidity rates: of children with an externalising syndrome, 42% also had an internalising one, whereas 44% of children with an internalising syndrome also had an externalising one. These rates are smaller than the corresponding ones based on parental reports: 51% and 52%. Verhulst and van der Ende (1991a) report a correlation of 0.59 between teacher-reported externalising and internalising scores, while Achenbach (1991a) reports one of 0.35.

4.2.2. School and classroom climate and children's adjustment and psychiatric problems

Schools are complex social systems. A clear academic emphasis, teachers' consistent management style, praise of pupils for work well done, greater responsibilities given to children, encouragement of pupils and co-operation between teachers characterise schools with a good climate (Rutter et al., 1979; Ouston et al., 1980). A favourable school climate is beneficial in several ways, as it not only predicts good academic achievement, but also good student behaviour and positive self-esteem (Rutter et al., 1979; Ouston et al., 1980; Hoge et al., 1990).

The work atmosphere and social relations in the classroom constitute the classroom climate (Fraser, 1986). This climate is influenced by pupils, teachers and school management (van der Sijde, 1988). Expectedly, classroom climate and school climate influence each other (Purkey and Smith, 1983; van der Sijde, 1988), but according to Mooij (1998), the classroom climate contributes more strongly to pupils' behaviour. As findings concerning the school climate may help in understanding classroom processes, they are also reviewed.

Battistich et al. (1995) studied school climate issues on two levels: a student level, within schools; and a school level, between schools. Sense of community at school was positively associated with pupils' attitudes and motives, behaviour, and to a lesser degree, academic performance. According to Battistich et al. (1995) schools with disadvantaged student populations particularly benefit from an elevated sense of community.

It seems very clear that school climate affects attitudes towards school. The question remains whether it also affects, or at least is associated with, children's behavioural and emotional symptoms and psychopathology. Some connections seem to exist between a poor school climate and externalising and internalising problems. A gender difference also appears to be present. In the study of Simons-Morton et al. (1999), a poor school climate was associated with externalising behaviour, such as fighting, bullying, truancy, vandalism and substance use, of 10- to 14-year-olds. Another cross-sectional study on sixth- and seventh-graders (Kuperminc et al., 1997) found a poor school climate to relate to both self- and teacher-reported internalising and externalising problems of boys, but only to self-reported externalising problems of girls. This indicates that boys might be more vulnerable to school climate effects at least in preadolescence and early adolescence, but it is also possible that boys' psychiatric problems affect the school climate to a higher degree than girls'. The study of Havlínová and Schneiderová (1995) supports a relationship between school climate and internalising problems. In line with this, the study of Buddeberg-Fischer et al. (2000), on older pupils aged 15-20 years, found a poor school climate to be related with school stress, which was, in turn, associated with internalising problems. However, in the longitudinal study of Kasen et al. (1990), there were significant effects of a poor school climate on the increase of externalising but not internalising problems over a two-year interval.

Although the relationship between school climate and children's mental health seems indisputable, its nature is still ambiguous. In addition, little longitudinal data exist on school climate effects. This field of child psychiatric research clearly warrants more attention to clarify the pattern of connections between the social environment at school and different types of psychiatric symptoms and disorders.

A positive relationship between the classroom climate and some aspects of children's adjustment, including self-esteem, interest and motivation, behaviour and school achievement, has been found in a considerable number of studies (Galluzi et al., 1980; Haertel et al., 1981; Fraser and Fisher, 1982; Fraser et al., 1982; Nelson, 1984; Wierstra, 1984; Ryan and Grolnick, 1986; Bryant et al., 1994; Cheng, 1994). Therefore, good school climate and a good classroom climate both seem to associate with children's adjustment at school.

Limited knowledge on the relationship between the classroom climate and children's mental health is available (Kellam et al., 1994 and 1998; Klicpera et al., 1995; Russell and Russell, 1996; Mooij, 1999). The Russel and Russel study (1996) implies that a relationship is present between poor classroom climate and internalising problems. Information on the relationship between the classroom climate and externalising problems is somewhat more extensive. A poor classroom climate has been found to be related to a higher frequency of aggressive behaviour in the classroom (Klicpera et al., 1995). Longitudinal and intervention trials even support a causal relationship (Kellam et al. 1994 and 1998; Mooij, 1999). Kellam et al. (1998) reported that aggressive boys attending highly aggressive first-grade classrooms were especially vulnerable to persisting aggression when followed on to sixth grade. Reducing the level of aggression in the classroom decreased aggressive behaviour, particularly in the most problematic boys (Kellam et al., 1994 and 1998).

4.3. Consequences of school budget cuts

4.3.1. Cuts made in Finnish schools in the 1990s

In the early 1990s, Finnish society experienced a severe economic recession. School budgets, which had increased through the 1980s, dropped to the level of 1980 during 1990-1994 (Kirjavainen, 1996). In the same period, school systems in other countries underwent reductions in funding as well (Herrington, 1998; Lawton, 1998). Further, many families were severely burdened as the national unemployment rate rose from 3% to over 18% (Heikkilä et al., 1997).

The severe economic recession of the 1990s impacted on both material and human resources in Finnish schools. Not only mainstream but also special education was affected. The Saari and Kupari study (1996) presents headmasters' views on consequences of cuts in schools, while Salmi et al. (1996) carried out a query among ten-year-old children and their parents, and interviewed teachers about these consequences. The findings of these studies are consistene with each other, revealing that negative consequences of budget cuts were common but that some positive consequences were also observed.

According to Saari and Kupari (1996), the main consequence of cuts seems to have been the establishment of larger educational groups. In addition to size of classes growing, classes were seldom divided into smaller groups for tutoring in subjects such as mathematics and languages. Another consequence was a lack of teaching material, followed by scarcity of remedial instruction, which resulted in the process of teaching becoming more difficult. According to the headmasters, there were less opportunities for teachers to take into account pupils as individuals, and pupils' learning, especially that of poorly achieving pupils, was hampered. As teachers' work loads increased, so did their stress. The organisation of teachers' work was also affected; the engagement of deputies was occasionally prohibited and teachers were sometimes given time off in lieu of holiday bonuses. In addition, the climate in some schools became more negative.

There were also cuts in special services (Meriläinen, 1996; Niemi and Ojala, 1996; Tuunainen and Ihatsu, 1996), which were likely to hinder the learning of those pupils needing extra support. The special services offered in Finnish schools are remedial instruction, special education and psychological counselling. Remedial instruction is given by homeroom teachers to pupils with transient learning problems, special education by specialised teachers to pupils with problems like dyslexia, and psychological counselling by psychologists to pupils with behavioural and emotional problems.

The volume of remedial instruction was diminished by over 40% in 1990-1994 (Niemi and Ojala, 1996). While there is no corresponding information on special education and psychosocial services, the number of special teachers was reduced (Tuunainen and Ihatsu, 1996). Psychosocial services seem to have been least affected, as existing counselling services mostly remained unchanged, whereas planned expansions were not carried out (Meriläinen, 1996). Some of the positive consequences of cuts mentioned in the Saari and Kupari study (1996) were a more analytical way of thinking when making economic decisions and greater co-operation between members of school staff.

4.3.2. Increase in group size and decrease in material resources

An increase in group size and cuts to material resources were the most common negative consequences of budget cuts in schools in the study of Saari and Kupari (1996). There is

a considerable amount of data describing the effect of group size on pupils' achievement. However, these findings are ambiguous, with some studies reporting only a small effect (Hanushek, 1986 and 1996; Helmke and Renkl, 1993; Kirjavainen and Loikkanen, 1995; Wild and Rost, 1995; Hanushek et al., 1996), while others have found small class size to be an advantage (Glass et al., 1982; McGiverin et al., 1989; Finn et al., 1990; Boozer and Rouse; 1995; Achilles et al., 1998; Ludwig and Bassi, 1999). Some studies indicate that a small class size may favourably affect academic achievements as well as behaviour and attitudes (Robinson, 1990; Achilles et al., 1998). A larger class size, in turn, may interfere with teachers' management of the class by giving less opportunities to take pupils into account as individuals and by creating disordered working conditions in the classroom (Cahen et al., 1983; Salmi et al., 1996).

Earlier findings on the impact of material resources on pupils' learning are somewhat contradictory. Attractiveness and comfort of schools are positively related to pupils' attitudes and behaviour (Earthman and Lemasters, 1998). A shortage of teaching material, in turn, is related to poor learning, at least in physical education classes (Hastie and Saunders, 1991). However, Rutter (1980) suggests that as long as school resources stay above a certain level pupils' learning and behaviour as well as the overall atmosphere in schools will remain unaffected.

4.4. Need and distribution of special services during an economic recession

Special services for pupils needing support were severely affected by the economic recession in Finland in the early 1990s (Meriläinen, 1996; Niemi and Ojala, 1996; Tuunainen and Ihatsu, 1996). The reduction of services might have affected pupils' equality in education, as pupils needing support had to compete for a limited number of services. Studies investigating firstly pupils' needs and secondly their selection for services in relation to different personal and family background factors are reviewed below.

4.4.1. Need for services

Low *socio-economic status (SES)* is related to children's lower academic achievement (Nader et al., 1981; Offord et al., 1985; Lipman et al., 1994), behavioural and emotional problems and referral for mental health services (Nader et al., 1981; Offord et al., 1985; Koot and Verhulst, 1992; Mattison et al., 1993; Lipman et al., 1994). Consequently, children from low SES families are likely to need more educational support and psychological counselling.

Unemployment and economic hardship seriously affect family life by creating crises in homes (Elder, 1974; Conger and Elder, 1994). In addition, children's psychological adjustment and academic achievement become compromised (Flanagan and Eccles, 1993; Pagani et al., 1999; Schmitt et al., 1999). Thus, children's needs for psychological and educational support might increase as a consequence of parental unemployment.

Parental involvement in children's schooling supports children and is positively related to school achievement (Astone and Lanahan, 1991; Martinez et al., 1995). In times of economic recession, parents become preoccupied with economic issues and their involvement in their children's life decreases (Conger and Elder, 1994). This may well increase children's need for support and help from other sources.

Gender is known to affect the need for educational support. Boys need and are referred to special education more often than girls (McLeskey and Waldron, 1990; Koot and Verhulst, 1992; Henning-Stout, 1993). However, findings on the impact of gender on the need for psychological counselling are ambiguous. Cohen et al. (1993) and Fombonne (1994) suggest that boys have more externalising problems than girls, which implies a greater need for counselling, but Koot and Verhulst (1992) and John et al. (1995) report that gender does not predict referral for or use of mental health services.

Pupils who are poorly engaged in their schoolwork are likely to have more transient learning problems and require more support. *Lack of involvement* in their schoolwork also characterises children with specific learning disorders (Bender, 1987; Chapman, 1988).

Children's *psychiatric problems* and learning difficulties are interrelated (Prior et al., 1999). Both internalising and externalising problems are likely to increase the need for psychological and educational support.

4.4.2. Distribution of services

The existing but rather scanty information on how pupils get selected for special services makes it possible to create hypotheses about the most probable mechanisms of the selection process.

Gender might impact on teachers' selection of children for services, as teachers are likely to pay more attention to boys than to girls (Vogel, 1990; Green, 1993; Rudduck, 1994; AAUW report, 1995). On the other hand, teachers might prefer girls, who may be more cooperative, for their own remedial instruction lessons.

Family SES might be associated with selection for special services, but the little that is known is contradictory: in the Canadian study of Offord et al. (1985), parental reports indicated that middle-class children received more help for their learning problems than poor children, whereas teachers reported the opposite. As to psychological counselling, we have found no data on its association with family SES. However, Garralda and Bailey (1988) report from Great Britain that there are more psychiatrically unfounded referrals from general practitioners to child psychiatrists concerning children from low SES families as compared with higher social classes. If this applied to schools, it would mean that low SES children would get referred more often to psychological counselling than children from more affluent backgrounds even when psychiatric morbidity is controlled.

We have found no research on how *parental unemployment* impacts on teachers' selection process. However, unemployment often creates a family crisis (Conger and Elder, 1994), and teachers, when they are aware of the family situation, might want to offer these children support.

Low *parental involvement* in a child's schoolwork is associated with low levels of teacher involvement with the child (Briggs and Hawkins, 1996), which might decrease the child's chances of getting services.

The *symptomatology* of pupils might also interfere in the selection process. Although contradictory results are available (Verhulst and Akkerhuis, 1989; Puura et al., 1998), teachers may experience difficulties in recognising internalising problems (Kashani et al., 1983; Offord et al., 1989. Quiet, passive children may call forth an indifferent attitude (Brophy and Good, 1974) and depressed students may arouse negative feelings in their teachers (Mullins et al., 1995). These results indicate that there might be a selection bias against internalising pupils.

We have found no data on how *pupils' own engagement in their schoolwork* and *academic achievement* influence the selection process. However, when services are limited, teachers may think that more motivated and better achieving pupils are more likely to benefit from support and therefore select them for the services.

5. AIMS OF THE STUDY

The aim of this thesis was to study children's mental well-being at school and to clarify how budget cuts at school, as assessed by teachers, influence the social school environment and are related to children's mental well-being and equality in education.The specific aims were as follows:

1. to examine the course of children's internalising, externalising and comorbid problems over four years, from the second to the sixth grade.

2. to investigate associations between the classroom climate and pupils' emotional and behavioural problems, and to study whether pupils who had had such problems in the second grade were more vulnerable to the effects of a poor classroom climate in grade six.

3. to describe teachers' views on how the economic recession was reflected in human and material resources at school and the mental health of sixth-graders.

4. to investigate whether school budget cuts, as seen by teachers, had an impact on equality aspects as regards children needing special services.

6. MATERIAL

This research is part of a larger epidemiological follow-up study on schoolchildren's mental health problems initiated in the winter of 1989-1990 (Almqvist et al., 1999). The sample (Figure 1) is representative of Finnish children born in 1981 and residing in Southern Finland. Representativeness was ensured by using a two-stage procedure, taking into account population density and population stability as well as social and demographic characteristics.

Description of the sample

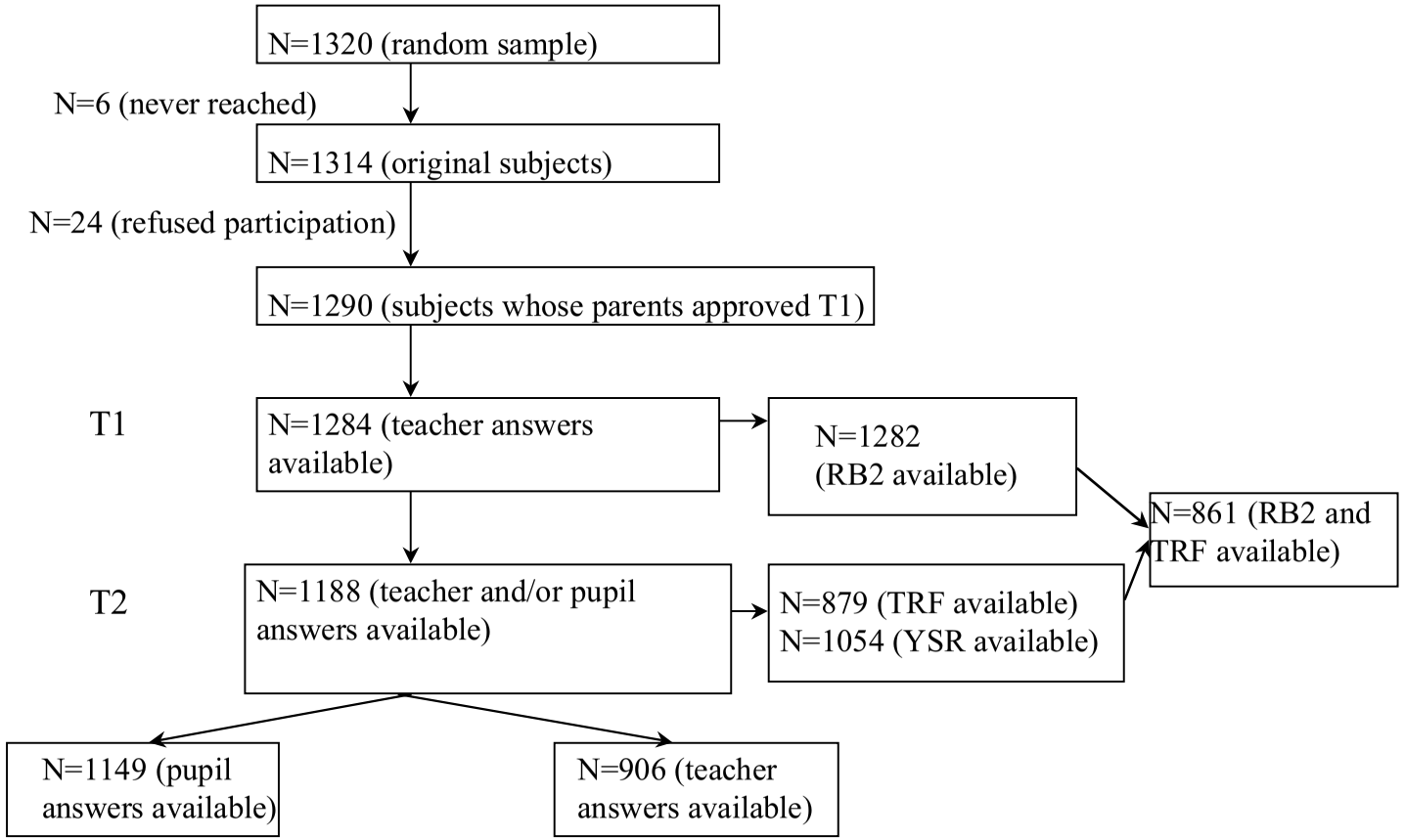

Figure. 1. Description of the sample.

Footnote: At Time 2, subjects who had refused to participate at Time 1 were also approached.

Pupils and their teachers answered questionnaires at school. In 1989-1990 (Time 1), when the children attended second grade, the random sample comprised 1320 children. Parents of 1290 children consented to participation in the follow-up study at Time 1. The pupils (N=1149) were followed up at the beginning of 1994 (Time 2), when they attended sixth grade. Teacher-reported data from Time 1 were available for 1284 pupils and from Time 2 for 906 pupils. At Time 2, teacher-reported classroom-related data were also used. There were six pupils for whom teachers provided only classroom-related data, i.e. no individual data. Teacher-reported pupil-related data from both time-points were available for 861 (65%) pupils. Cross-sectional analyses are based on data for 906 pupils, and follow-up studies on data for 861 pupils.

Information on second-graders was gathered from 129 teachers from 63 schools (Time 1), and on sixth-graders from 158 teachers from 107 schools (Time 2). However, only 145 of the sixth-grade teachers provided data concerning the classroom environment. If a child moved to another school during the follow-up period, he/she was traced, which explains the increase in the number of teachers and schools at Time 2. In cases where a pupil moved to a school that had not participated in the study at Time 1, he/she was the only representative of his/her class in this study. However, teachers provided data on the classroom environment, such as class size, with respect to the whole class. Time 1 data on class size were not used in this study, but at Time 2 the mean class size of mainstream classrooms was 25.7 (SD 4.6), and of classrooms other than mainstream 9.9 (SD 4.9). Mainstream classrooms were attended by 883 out of 903 pupils (97.8%).

Attrition between Time 1 and Time 2 samples was not dependent on the child's gender (chisq(1)=0.3, p=0.6), internalising (t=0.7, 1280df, p=0.5) or externalising (t=0.8, 765df, p=0.4) symptoms or family social class (t=-1.3, 1219df, p=0.2). The measure of family social class was as described by Almqvist et al. (1999). The attrition was, however, dependent on pupils' academic achievement (chisq(2)=9.7, p=0.008), which was assessed at Time 1 by the teachers on a three-point scale. The pupils who dropped out had been lower achievers at Time 1. If a teacher chose not to take part in the study, the teacher-based information on all pupils in his/her class was lost.

7. METHODS

7.1. Questionnaire used

7.1.1. Teacher reports on pupils' mental health (Studies I, II, IV)

Initially, at Time1, teachers evaluated the mental health of pupils by filling the RutterB2 questionnaire (RB2) (Rutter, 1967). This consists of 26 statements on children's emotional and behavioural problems rated on a three-point scale. Six statements make up an externalising scale and four statements an internalising scale (Rutter, 1967; Sclare, 1997). The good reliability and validity of the RB2 has been established (Elander and Rutter, 1996; Rutter, 1967).

At Time 2, teachers filled out the syndrome part of Achenbach's Teacher Report Form (TRF) (Achenbach, 1991a) on pupils' behavioural and emotional problems. The TRF consists of 118 specific problem items and two open-ended items, all rated on a three-point scale. The TRF externalising scale comprises 34 items belonging to the two narrow-band scales "aggressive behaviour" and "delinquent behaviour", while the TRF internalising scale comprises 35 items belonging to the three narrow-band scales "withdrawn", "somatic complaints" and "anxious/depressed". The good reliability and validity of the TRF has been established (Achenbach, 1991a). At present, there is an ongoing study aiming at the standardisation of the TRF in Finland (Weintraub, 2002). Preliminary results indicate that the TRF is a useful instrument in a Finnish population.

In Study I, deviance (vs. non-deviance) was defined by an RB2 or a TRF score higher than the 90th percentile of the cumulative frequency distribution of the syndrome scales in the total sample. This gave cut-off scores on the RB2 of 3 for internalising and 4 for externalising behaviour, and on the TRF of 14 and 20, respectively . In Study II, RB2 and TRF scores were used as continuous variables and RB2 scores were centralised. Finally, in a cross-sectional study (IV), TRF scores were classified into normal, borderline and clinical categories for both genders separately according to Achenbach (1991a). Boys and girls were then pooled together into clinical, borderline and normal categories of internalising and externalising symptoms.

7.1.2. Teacher reports on pupil-related educational issues (Study IV)

Teacher reports on pupil-related educational issues at Time 2 were used in Study IV. Teachers assessed pupils' needs for remedial instruction, special education and psychological counselling. They also reported whether pupils had received the respective service, and if not, whether it was because budget cuts had decreased the availability of the service or for "other reasons".

Parents' interest in their child's schoolwork was assessed by teachers on a five-point scale, from "extremely interested" to "does not seem to be interested". Teachers also assessed their co-operation with parents on a five-point scale, from "very good" to "very poor". The two variables were made into a composite variable on parental involvement, which was then divided into three categories.

Students' academic achievement was reported on a three-point scale (above/ on/ below average).

7.1.3. Teacher reports on class- and school-related issues (Studies II, III)

Teacher reports on class-related educational issues at Time 2 were used in Study III and their reports on classroom climate were used in Study II and III. Teachers' assessments of school budget cuts during the nation-wide economic recession of the early 1990s were used as measures for these cuts (Study III). The issues, which made up the basis for these measures, are described below.

Teachers assessed wheather group size had increased and whether this had affected the class. Further, they specified a possible effect in an open question, and the answers were later grouped into six categories: (1) slower learning mostly due to less individual teaching, (2) concentration problems in pupils, (3) management problems for teachers, (4) increased stress for teachers, (5) increased stress for pupils and (6) other.

Teachers reported on whether material resources had decreased and then assessed whether this had impaired the overall academic achievement in a class. They also reported if the availability of psychological counselling had decreased.

The effects of budget cuts at school on teachers' experiences of their work was assessed by two questions inquiring about the effects on work stress and motivation. These correlated highly and were summed to create a composite variable on teachers' perceptions of their work.

Teachers also evaluated whether the economic recession had affected the atmosphere in the school faculty, and in case of an effect, they specified it in an open question. The answers to this were grouped into five categories: (1) an increase in teachers' mental and physical symptoms, (2) negative effects on school organisation and teachers' working conditions, (3) motivational problems and a sense of devaluation of teachers' work in society, (4) problems related to pupils and (5) positive effects.

Teachers evaluated whether the economic recession was reflected in pupils' behaviour in the classroom. A possible effect was specified in an open question, and the answers were grouped into six categories: problems arising from (1) families, (2) pupils' depression, (3) pupils' problem behaviour, (4) loss of school resources, (5) a positive change in pupils' values and (6) other.

The classroom climate was measured by four variables reported by teachers on five-point scales: (1) class spirit, (2) success of joint activities in class, (3) bullying in class and (4) orderly working conditions during lessons. These were combined to form a composite variable.

7.1.4. Pupils' self-reports on mental health (Study III)

At Time 2, pupils evaluated their mental health by filling out the syndrome part of the Youth Self-Report (YSR) Form, the reliability and validity of which has been established (Achenbach, 1991b). The YSR contains 100 specific problem items and an open-ended item, which are all rated on a 0-2 scale. The YSR externalising scale comprises 30 items belonging to the narrow-band scales "aggressive behaviour" and "delinquent behaviour", while the YSR internalising scale comprises 31 items belonging to the three narrow-band scales "withdrawn", "somatic complaints" and "anxious/depressed". Internalising and externalising dimensions were formed and grouped into normal, borderline and clinical categories for both genders separately (Achenbach, 1991b).

7.1.5. Pupils' self-reports on educational issues and family socio-economic status (Studies III, IV)

At Time 2, pupils reported how satisfied they were with their academic achievement and how interested they were in school subjects on five-point scales. These two variables correlated significantly and were made into a composite variable on pupils' engagement in schoolwork, which was then divided into three categories (Study IV). In Study III, the variable describing pupils' interest in school subjects was used separately.

Pupils' report on their parents' occupation indicated parents' socio-economic status in Study IV. Socio-economic status was divided into three categories: 1. upper-level employees and entrepreneurs, 2. lower-level employees with administrative and clerical occupations,

3. manual workers and others. Family SES was indicated by the occupation of the parent whose profession was ranked higher. Pupils also reported the unemployment status of their fathers and mothers during the previous six months (Study IV).

7.2. Statistical analysis

The chi square test was used for testing associations between categorical variables (Studies I, III, IV), and Pearson correlations were calculated between continuous variables (Study II).The t-test was used for assessing attrition from Time 1 to Time 2. The statistical significance of the difference between two proportions was tested with the proportion test option of S-plus 4 (S PLUS 4 Guide to Statistics, 1997) (Study I). The program provides the confidence intervals for the proportions as well as the statistical significance of the difference of two proportions.

Logistic regression analysis was used in Studies I and IV, and odds ratios and 95% confidence intervals were calculated. In Study II, multiple linear regression analyses were carried out for boys and girls separately. When interaction terms were included (Aiken and West, 1991) in the regression analyses of Study II, the independent variables were centralised, and the explanatory variables were entered in steps.

8. RESULTS

8.1. Four-year course of teacher-reported internalising, externalising and comorbid syndromes in preadolescent children (Study I)

8.1.1. Comorbidity rates

Before presenting the results of Study I, the concepts of "pure", "broad" and comorbid syndromes are defined. Children who score within the deviant range on a syndrome scale (internalising or externalising) and in the non-deviant range on the contrasting scale comprise the "pure" category. Children within the deviant range on a syndrome scale with no other requirements made are categorised as having a "broad" syndrome. When both the internalising and externalising scores are in the deviant range, a child is comorbid.

Gender differences were present in comorbidity rates. Of the children with internalising syndromes at Time 1, 7.1% of girls and 44.4% of boys also had an externalising syndrome ($p<0.01$). At Time 2, the corresponding figures were 8.3% and 42.9% ($p<0.01$). When comorbidity between externalising and internalising syndromes is scrutinised with the externalising syndrome as a reference point, no statistically significant gender differences were found in comorbidity rates at either time-point; at Time 1, the comorbidity rate was 33.3% for girls and 33.8% for boys, and at Time 2, the rates were 23.1% and 29.6%, respectively. Changes in comorbidity rates over time were not statistically significant.

Bidirectional comorbidity rates (McConaughy and Achenbach, 1994), which make it possible to compare comorbidity without confounding effects of the different base rates of

externalising and internalising syndromes, were 6.3% / 6.5% at Time 1/ Time 2 for girls and 23.8% /21.2% for boys. The changes over time were not significant, but the gender difference was marginally significant (p=0.055 at Time 1 and p<0.05 at Time 2).

8.1.2 Course of pupils' comorbid and pure syndromes

At least by the present definitions of the syndromes, both pure externalising syndrome and comorbidity are more common among boys than girls (Table 1). However, the small number of girls with externalising syndrome makes the evaluation of the course of girls' comorbid syndromes uncertain.

The course of boys' and girls' syndromes are reported separately below, and differences in the course of pure and broad syndromes are specified.

8.1.3. Course of boys' disorders

Pure externalising and pure internalising syndromes in boys tend to "breed true", i.e. boys showing deviance at Time 1 are more likely to have the same kind of deviance at Time 2 than deviance of other categories (Table 2). In contrast, about two fifths of comorbid boys develop deviance of pure externalising type at Time 2, and about one fifth remain comorbid.

Table 2. Four-year course of boys' (N=438) pure internalising/externalising syndromes and comorbidity.

	Time 1							
	Pure internalising		Pure externalising		Comorbid		None of these	
Time 2	N	(%)	N	(%)	N	(%)	N	(%)
Pure internalising	6	(20.0)	1	(2.1)	1	(4.2)	20	(5.9)
Pure externalising	2	(6.7)	16	(34.0)	10	(41.7)	22	(6.5)
Comorbid	2	(6.7)	7	(14.9)	5	(20.8)	7	(2.1)
None of these	20*	(66.7)	23	(48.9)	8	(33.3)	288	(85.5)
Total	30	(100)	47	(100)	24	(100)	337	(100)

*One of the subjects scored in the deviant range of the total score at Time 2.

Table 1. Number of pupils with pure internalising/ externalising syndromes and comorbidity at Time 1 and Time 2.

	Total				Pure internalising				Pure externalising				Comorbid				None of these			
	Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls		Boys		Girls	
	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)	N	(%)
Time 1	438	(100.0)	423	(100.0)	30	(6.8)	26	(6.1)	47	(10.7)	4	(0.9)	24	(5.5)	2	(0.5)	337	(76.9)	391	(92.4)
Time 2	438	(100.0)	423	(100.0)	28	(6.4)	33	(7.8)	50	(11.4)	10	(2.4)	21	(4.8)	3	(0.7)	339	(77.4)	377	(89.1)

Partialling out comorbidity highlights the rarity of a child's crossing over from pure internalising to pure externalising syndrome and vice versa (Study I:Table 1). This seems especially clear in externalising syndrome in boys. Only 2% of male pure externalisers develop pure internalising syndrome at follow-up, while, if comorbidity is not partialled out, 17% seem to become internalisers. The rise in internalising symptoms among these boys at Time 2 is channelled to comorbidity; about 15% of boys who are externalisers at Time 1 develop an internalising syndrome *in addition* to being persistently deviant on the externalising scale.

When comorbidity is not analysed at all (Study I: lower right of Table 1), boys quite often seem to switch over from one syndrome to the other syndrome over time.

Comorbidity changes the outcome of boys' internalising syndrome. This can be seen by comparing the outcomes of pure and broad internalising syndromes in Study I:Table 1. Of the broadly internalising boys at Time 1, 13% are pure internalisers, 22% pure externalisers and 13% comorbid at Time 2.When comorbidity is partialled out, 20% are pure internalisers, 6.7% pure externalisers and 6.7% comorbid at Time 2.

The recovery rates for boys differ between the syndromes. Despite not having an internalising and/or externalising syndrome, one boy still scored in the deviant range of the total score at Time 2. This boy was excluded when the recovery rate was calculated. Pupils were considered to have recovered at Time 2 if they had none of the syndromes, i.e. internalising, externalising or comorbid, and did not score in the deviant range of the total score at Time 2. Thus, the recovery rate for the pure internalising syndrome is 63.3% and for the broad syndrome 50% . The corresponding recovery rates for the pure and broad externalising syndromes are 48.9% and 43.7%.The recovery rate for the comorbid syndrome is only 33.3%.

8.1.4. Course of girls' disorders

The small number of girls deviant on the externalising scale render findings that concern girls more ambiguous. One purely internalising girl also developed an externalising syndrome over time and therefore became comorbid. There were only two comorbid girls at Time 1. One switched over to pure internalising syndrome at Time 2, and the other to the recovery group.

Table 3. Four-year course of girls' (N=423) pure internalising/externalising syndromes and comorbidity.

	Time1							
	Pure internalising		Pure externalising		Comorbid		None of these	
Time 2	N	(%)	N	(%)	N	(%)	N	(%)
Pure internalising	4	(15.4)	0	(0)	1	(50.0)	28	(7.2)
Pure externalising	0	(0)	1	(25.0)	0	(0)	9	(2.3)
Comorbid	1	(3.9)	0	(0)	0	(0)	2	(0.5)
None of these	21*	(80.8)	3	(75.0)	1	(50.0)	352	(90.0)
Total	26	(100)	4	(100)	2	(100)	391	(100)

*One of the subjects scored in the deviant range of the total score at Time 2.

Neither the outcome of girls' pure and broad internalising syndromes at Time 2 nor recovery rates seem to differ (Study I:Table 2). In spite of not having an internalising and/or externalising syndrome, one girl still scored in the deviant range of the total score at Time 2. This girl was excluded when the recovery rate was calculated. Thus, the recovery rate for girls' pure internalising syndrome is 76.9% and for broad syndrome 75%. For the pure and broad externalising syndromes, the corresponding rates are 75% and 66.7%. The recovery rate for comorbid girls is 50%.

8.1.5. Factors at Time 1 predicting the risk for children to develop pure and broad internalising/externalising syndromes and comorbidity at Time 2

The odds ratio for a certain outcome, when an explanatory variable is present, is reported compared with the situation which would result if this variable were not present, e.g. male gender in comparison with female gender, presence of pure internalising syndrome in comparison with absence of pure internalising syndrome. Male gender predicts Time 2 comorbidity (marginal significance) and pure and broad externalising but not internalising syndromes.

The odds ratios for the syndromes ranged from 0.3 to 12.2.. The highest odds ratio was for comorbid children at Time 1 to have persistent comorbidity at Time 2.

Pure internalising syndrome at Time 1 predicted pure internalising syndrome and comorbidity at Time 2 but not pure externalising syndrome. Likewise, pure externalising syndrome at Time 1 predicted pure externalising syndrome and comorbidity but not pure internalising syndrome. Comorbidity at Time 1 predicted both pure externalising syndrome (9.5) and comorbidity (12.2), but not internalising syndrome**.** If comorbidity was not ex-

cluded (Study I: Table 4), broad internalising and externalising syndromes predicted themselves at Time 2.

8.2. Classroom climate and mental health of primary school children (Study II)

The correlations between all variables for boys are seen in Table 4 and for girls in Table 5.

Table 4. Pearson correlations between all variables for boys (Study II).

	1.	2.	3.	4.	5.	6.
1. Classroom climate						
2. Total problems (Time 1)	0.21 p=0.0001					
3. Externalising problems (Time 1)	0.20 p=0.0001	0.85 p=0.0001				
4. Internalising problems (Time 1)	0.10 p=0.0424	0.62 p=0.0001	0.27 p=0.0001			
5. Total problems (Time 2)	0.33 p=0.0001	0.55 p=0.0001	0.47 p=0.0001	0.29 p=0.0001		
6. Externalising problems (Time 2)	0.30 p=0.0001	0.53 p=0.0001	0.54 p=0.0001	0.19 p=0.0001	0.89 p=0.0001	
7. Internalising problems (Time 2)	0.26 p=0.0001	0.32 p=0.0001	0.19 p=0.0001	0.29 p=0.0001	0.75 p=0.0001	0.45 p=0.0001

Table 5. Pearson correlations between all variables for girls (Study II).

	1.	2.	3.	4.	5.	6.
1. Classroom climate						
2. Total problems (Time 1)	-0.06 p=0.2031					
3. Externalising problems (Time 1)	-0.02 p=0.6289	0.73 p=0.0001				
4. Internalising problems (Time 1)	-0.09 p=0.0708	0.70 p=0.0001	0.25 p=0.0001			
5. Total problems (Time 2)	0.20 p=0.0001	0.28 p=0.0001	0.20 p=0.0001	0.14 p=0.0044		
6. Externalising problems (Time 2)	0.19 p=0.0002	0.21 p=0.0001	0.28 p=0.0001	0.01 p=0.8508	0.80 p=0.0001	
7. Internalising problems (Time 2)	0.18 p=0.0004	0.19 p=0.0001	0.05 p=0.3332	0.19 p=0.0001	0.77 p=0.0001	0.32 p=0.0001

Significant main effects of both Time 1 total problem score and classroom climate on Time 2 total problems for both genders were present (Study II:Table 1).

The interaction of girls' overall problems in the second grade and the classroom climate in the sixth grade was significant (Study II: Figure 1). Thus, girls with a higher total score in the second grade were especially vulnerable to the effects of a poor classroom climate in the sixth grade. No interaction effect was present for boys.

Significant main effects were found for both Time 1 externalising/internalising problems and Time 2 classroom climate on Time 2 externalising/internalising problems for both genders (Study II:Tables 2 and 3).

The interaction effect between Time 1 externalising problems and Time 2 classroom climate was significant for girls (Study II: Figure 2). This means that girls with externalising problems in the second grade were especially vulnerable to the adverse effects of a poor classroom climate in the sixth grade. The interaction effect between classroom climate and Time 1 internalising problems was not significant for either sex.

Unfortunately, no data were available on the second-grade classroom climate. To clarify the direction of causality between the classroom climate and children's emotional and behavioural problems, we investigated whether children's problems in the second grade affected the classroom climate in the sixth grade by carrying out regression analyses for boys and girls. No effect was found for the girls, but for the boys, Time 1 externalising and total

problem scores predicted a poor classroom climate at Time 2 (standardised estimate 0.189, p=0.0002 and standardised estimate 0.207, p=0.0001, respectively).

8.3. Consequences of school budget cuts, as evaluated by teachers, on the learning environment and adjustment of sixth-graders in Finnish schools (Study III)

8.3.1. Descriptive results

Teachers reported that school budget cuts affected them negatively in many ways: as many as 100 teachers out of the 126 teachers (79%) who had answered this question, reported at least some negative impact on the overall experience of their work. More specifically, work stress was increased for 108 out of 142 teachers (76%) and motivation was decreased for 69 out of 143 teachers (48%). In addition, 103 teachers out of 142 (73%) reported a change in the atmosphere of the school faculty. When teachers described this change (Table 6), their own mental and physical symptoms emerged as the most prevalent category, followed by problems related to school organisation and teachers' working conditions. These were followed by motivational problems, perceived devaluation of teachers' work by society and problems related to pupils making teaching more difficult than earlier. Positive effects were mentioned by a minority of the teachers.

According to the teachers, group size had increased because of budget cuts in 62 out of 144 classes (43%). When the teachers were asked in a separate question whether change in group size had affected the class, 59 out of 120 teachers (49%) reported a change, which was described as negative. Teachers' three main complaints (Table 6) concerning larger group sizes were impeded learning due to less possibilities to tutor pupils individually, problems with pupils' concentration and restlessness in class and teachers' management problems due to the larger group size and many different pupil ability levels. These were followed by stress for teachers from constant hurrying, stress for pupils because of overcrowded classrooms, and tiredness and other effects.

Teachers estimated that material resources had decreased in 125 out of 141 classes (89%), which in their view had impaired pupils' academic achievements in 33% of these classes. They stated that psychological counselling services had decreased in 53 out of 138 classes (38%).

As many as 77 out of 133 teachers (58%) estimated that the economic recession was reflected in pupils' behaviour in classrooms. Teachers specified these effects (Table 6) as resulting from family problems, pupils' depression (e.g. excessive worries, loss of motivation and passivity), pupils' disturbing behaviour and negativity, loss of human and material resources, positive changes in pupils' values and other effects.

8.3.2. Impact of increase in group size and decrease of material resources and psychological counselling

An increase in group size negatively affected classroom climate (chisq(2)=11.778, p=0.003). A negative association was also present between larger group size and teachers' experience

of their work (chisq(2)=10.457, p=0.005). Cuts in material resources or in psychological counselling had no similar effects.

An increase in group size was related to girls' externalising problems both in the borderline and the clinical range (chisq(2)=11.917, p=0.003), as was a decrease in psychological counselling services (chisq(2)=7.935, p=0.019.) No similar associations were found for boys, or concerning internalising problems or pupils' overall adjustment.

Increase in group size, cuts in material resources and decreased availability of psychological counselling were not related to pupils' self-reported interest in school subjects.

8.4. Budget cuts in schools, as assessed by teachers, and inequality in education: children needing special services in focus (Study IV)

8.4.1. Descriptive results

According to teachers' reports, sixth-grade boys had more externalising problems than girls (chisq(2)=14.749, p=0.001), while no statistically significant gender difference was found for internalising problems. In addition, boys needed all kinds of special services more often than girls: remedial instruction: boys/girls 40.4% / 31.7% (chisq(1)=7.343, p=0.007); special education 21.5% / 8.9% (chisq(1)=27.025, p=0.001); psychological counselling 25.7% / 15.9% (chisq(1)=13.089, p=0.001).

According to teachers' assessments, there was a considerable gap between the need for and access to special services because of budget cuts. This was largest in remedial instruction (53.7%), somewhat smaller in special education (43.5%) and smallest in psychological counselling (9.6%). An additional portion of pupils were left without services because of other reasons; this portion was largest in psychological counselling (13.9%). The only gender difference was in remedial instruction; more boys (60.2%) than girls (44.9%) had not received, because of budget cuts, the remedial instruction they needed (chisq(2)=8.056, p=0.018) (Study IV:Table I).

Budget cuts were the main reason for lack of access to educational special services (budget cuts/"other reasons": remedial instruction 174/21 and special education 60/12). This was in contrast to psychological counselling, where "other reasons" was the prevailing cause (budget cuts/"other reasons" 18/26). To increase the number of observations for statistical purposes, the two no-access categories were combined to one "no access" category. Associations between the independent variables are shown in Table 7.

8.4.2. Analytical results on the need for services

To make the interpretation of the results clearer, the interpretation of the odds ratios will first be explained. When the odds ratios increase successively from the favourable to the intermediate to the poor category of the independent variable, the trend is significant if the statistical significance comes out between favourable and intermediate as a low odds ratio or between intermediate and poor as a high odds ratio.

The univariate relationships between the independent and dependent variables are presented in Study IV:Table II and the results of the multivariate logistic regression analyses concerning the need for special services are presented in Study IV:Table III.

Lower family SES, lower parental involvement and lower student engagement predict-

Table 6. Overview of teachers' views on how the economic recession was reflected in their working conditions and in pupils.

A. Teachers' views on how the atmosphere in the school faculty was changed by budget cuts (number of answers/% of all answers)

1. teachers' mental and physical symptoms (73/43.2%)
2. problems related to the school organisation and teachers' working conditions (65/38.5%)
3. motivational problems of the teachers and perceived devaluation of teachers' work (17/10.
4. problems related to pupils making teaching more difficult (11/6.5%)
5. positive effects (3/1.8%)

B. Negative consequences of increased group size as seen by teachers (number of answers/% of all answers)

1. impeded learning (35/38.9%)
2. problems with pupils' concentration and restlessness in class (20/22.2%)
3. teachers' management problems (17/18.9%)
4. stress for teachers (8/8.9%)
5. stress for pupils (8/8.9%)
6. other effects (2/2.2%)

C. Teachers' views on how the economic recession was reflected in pupils' behaviour in classrooms (number of answers/% of all answers)

1. family problems (48/39.3%)
2. pupils' depression (31/25.4%)
3. pupils' disturbing behaviour and negativity (23/18.9%)
4. loss of human and material resources in schools (6/4.9%)
5. positive changes in pupils' values (5/4.1%)
6. other effects (9/7.4%)

ed a higher need for remedial instruction. The effect of an internalising disorder in the clinical range on the need for remedial instruction was marginally significant. Male gender, lower family SES, lower parental involvement, internalising symptoms and lower student engagement predicted a higher need for special education. Male gender, lower student engagement and below average academic achievement predicted a higher need for psychological counselling.

8.4.3. Analytical results on the selection of pupils for special services

The univariate relationships between independent and dependent variables are presented in Study IV: Table IV, and the multivariate results predicting no access to special services in Study IV: Table V.

Female gender and above average academic achievement improved access to remedial instruction, and a higher student engagement to special education. Higher family SES improving pupils' access to remedial instruction was marginally significant. The effect of maternal (but not paternal) unemployment turned out to be marginally significant for both of these educational services, i.e. a tendency was present for teachers to select children whose mothers were unemployed.

Selection to psychological counselling was not dependent on the pupils' socio-economic background or educational achievement. However, there was one significant and highly surprising relationship: internalising problems predicted less access to psychological counselling.

9. DISCUSSION

9.1. Methodological considerations

Considerable attrition occurred between baseline and follow-up. This was mostly due to the data collection procedure. If a teacher decided not to participate in the study, data for all children in the class were lost. The attrition was not dependent on the child's gender, internalising or externalising symptoms or family social class. It was dependent on pupils' academic achievement; children who achieved poorly at Time 1 tended to drop out. This means that teachers with more problematic pupils might not have had sufficient motivation to fill in the fairly long Achenbach questionnaires at Time 2. Consequently, the classroom climate ratings are likely to be overly positive. This might introduce a bias against our hypotheses in Studies II and III.

Different scales were used at Time 1 and Time 2 to measure children's psychiatric problems (Studies I and II). However, both the RB2 and the TRF have good psychometric properties and are documented to have good discriminant validity (Achenbach, 1991a; Elander and Rutter, 1996; Rutter, 1967). Furthermore, they have a high overall correlation of 0.9 (Sourander and Piha, 1997).

Behavioural and emotional deviance was defined by a score higher than the 90th percentile in the frequency distribution of internalising and externalising scales at Time 1 and

Table 7. Associations between independent variables in Study IV.

	1.	2.	3.	4.	5.	6.	7.	8.
1. Family socioeconomic status								
2. Maternal unemployment	chisq(2)=111.686 p=0.001							
3. Paternal unemployment	chisq(2)=53.226 p=0.001	chisq(1)=10.602 p=0.001						
4. Parental involvement	chisq(4)=42.870 p=0.001	chisq(2)=34.107 p=0.001	chisq(2)=11.401 p=0.003					
5. Gender	chisq(2)=7.569 p=0.023	chisq(1)=2.419 p=0.120	chisq(1)=0.023 p=0.879	chisq(2)=5.729 p=0.057				
6. Externalising problems	chisq(4)=3.244 p=0.518	chisq(2)=2.945 p=0.229	chisq(2)=0.045 p=0.978	chisq(4)=49.814 p=0.001	chisq(2)=14.749 p=0.001			
7. Internalising problems	chisq(4)=5.918 p=0.205	chisq(2)=3.983 p=0.136	chisq(2)=1.169 p=0.557	chisq(4)=31.820 p=0.001	chisq(2)=3.963 p=0.138	chisq(4)=76.667 p=0.001		
8. Student engagement	chisq(4)=14.482 p=0.006	chisq(2)=12.563 p=0.002	chisq(2)=2.481 p=0.289	chisq(4)=40.746 p=0.001	chisq(2)=12.629 p=0.002	chisq(4)=55.253 p=0.001	chisq(4)=34.705 p=0.001	
9.Academic achievement	chisq(4)=48.548 p=0.001	chisq(2)=12.956 p=0.002	chisq(2)=10.287 p=0.006	chisq(4)=108.645 p=0.001	chisq(2)=25.916 p=0.001	chisq(4)=43.737 p=0.001	chisq(4)=31.084 p=0.001	chisq(4)=95.715 p=0.001

Time 2 (Study I). This means that possible age and gender effects on internalising and externalising problems were not taken into account. Externalising problems are more frequent in boys than in girls (Cohen et al., 1993), and discussion has ensued as to how this should be reflected in the selection of cut-off points (Fombonne, 1991). Achenbach recommends lower cut-off points for girls than for boys (Achenbach, 1991a), but Rutter does not (Rutter, 1967; Sclare, 1997). The small number of girls with externalising syndrome in Study I might either reflect a true phenomenon or be an artefact due to the selection of the cut-off points. As to the age effect, adolescence is the time when presentations and frequencies of symptoms change, with the greatest change occurring after the age of 12 (Cohen et al., 1993), that is, in children older than those in the present sample.

Study I examines comorbidity. Behavioural and emotional problems are typically measured by symptom scales, and from a statistical point of view, the deviant category (syndrome) is defined by cut-off points on the scale. Comorbidity, on the other hand, is not dimensional, but by definition, entails caseness. In Study I, the comorbidity category was constructed from the deviant categories based on the internalising and externalising scales. Therefore, it covaries with the pure internalising and externalising syndromes; the selection of cut-off points on the original scales has a strong influence on the comorbidity rates.

The number of externalising girls is very small in Study I, which might, as mentioned, either be a consequence of the selection of cut-off points or a true phenomenon. This makes results concerning girls ambiguous. In Study II, externalising problems are used as a continuous variable. Therefore, results of Study II are interpreted such that even a small increase in externalising problems may increase the risk for a certain outcome.

Teachers rated both the children and the classroom climate (Study II). This is likely to create informant bias and increase the strength of association between individuals' emotional and behavioural problems and the climate. In future studies, it would be important to use independent ratings.

The scale for scoring the classroom climate, used in Studies II and III, was developed by Solantaus for these studies and has not been validated. Nevertheless, the variables constituting this composite variable correspond to the core elements of My Class Inventory (Fraser, 1986 and 1991), which is an instrument commonly used for assessing the classroom climate in primary school.

Classroom-level issues were linked to pupil-level data (Studies II, III). The subsequent analyses between classroom-level and pupil-level variables were carried out on a pupil-level. This might distort results. However, no multilevel analyses were carried out. The use of such analyses will be a goal for future research.

The measures used for school budget cuts are based on teachers' notions and are therefore subjective (Study III). However, we assumed that teachers, as educational professionals, were aware of the nature and severity of the changes in schools, following the economic recession of the early 1990s. Yet, as psychological counselling services are not a matter of educational support, teachers' knowledge of the availability of these services may be limited. In future studies, it will be important to operationalise the effects of budget cuts in schools.

Teachers evaluated both the measures for budget cuts in schools and the consequences of these cuts (Study III). This is likely to increase the strength of association between budget cuts and their consequences in the school environment. In the future, it will be important to use independent ratings.

The information about pupils' need for and access to special services, as well as the assessment of their psychiatric problems, came from a single informant, the teacher (Study

IV). Teachers are likely to correctly report those pupils receiving special services, but educational and psychological needs may go unnoticed. Therefore, Study IV might report an underestimate of the need and also of the gap between need and supply.

Whether a gap already existed between need and supply before the recession is unknown (Study IV). However, Meriläinen (1996) has documented that a gap either emerged or was greatly enlarged during the recession years, which is in accordance with our findings. Our results apply to a situation where a gap, which has recently become enlarged, exists between need and supply .

9.2. Children's psychiatric problems in the school environment

9.2.1. Co-occurring internalising and externalising symptoms constitute a risk for poor prognosis over time, particularly among boys (Study I)

Children's emotional and behavioural problems are individual focuses in child psychiatry. However, until recently, children's co-occurring problems have received much less attention. This is true even when comorbidity rates are substantial, especially among boys. Co-occurring internalising and externalising problems are likely to hamper children's schoolwork in several ways. Children with internalising problems seem to have problems with the learning process itself, while children with externalising problems have more difficulties with motivation (Study IV). Children with co-occurring syndromes might have to tackle both kinds of problems.

Teachers may have difficulties in noticing children's co-occurring problems, as it seems that comorbidity rates based on parental reports (Verhulst and Althaus, 1988; Verhulst and van der Ende, 1993) are higher than those found in Study I, which was based on reports by teachers. Indeed, according to McConaughy and Skiba (1993), there are indications that comorbidity rates in children are higher when parents assess the children as compared with teachers. A more thorough understanding of the problems of children with co-occurring syndromes will help school staff to support these children.

Although broad internalising and externalising syndromes, i.e. syndromes where comorbidity has not been partialled out, tend to predict the same kind of psychopathology over the years (McConaughy et al., 1992; Stanger et al., 1992; Orvaschel et al., 1995), they may also predict the contrasting syndrome (Verhulst and van der Ende, 1991b; McGee et al., 1992; Offord et al., 1992). In Study I, the latter is apparent especially for boys, but this tendency seems to disappear when comorbidity is taken into account. A child was rarely found to switch from pure internalising to pure externalising syndrome, or vice versa, over the years, which is in accord with the results of Verhulst and Althaus (1988). However, pure internalisers and pure externalisers face the risk of developing a comorbid syndrome, i.e. developing the contrasting syndrome while maintaining the original one. The odds for pure externalisers to develop comorbidity is almost twice as high as the respective odds for pure internalisers.

Boys seem to have a higher risk for developing a comorbid syndrome than girls. Because of the small number of girls with an externalising syndrome, findings on girls are only indicative, and there is a need for more research. Nevertheless, these results are interesting as such since gender differences in comorbidity have seldom been studied. Contrary to the findings in Study I, Kovacs et al. (1988) and Cohen et al. (1993) did not find any gender difference in comorbidity, but most studies have failed to analyse gender effects on childhood comorbidity.

The recovery rates differed between boys and girls and between the type of disorder. The highest recovery rate was for girls with pure internalising syndrome, and the lowest for comorbid boys. Overall, prognoses were better for girls. Earlier data on sex differences in recovery rates are conflicting (Ghodsian et al., 1980; Verhulst and Althaus, 1988; Verhulst and van der Ende, 1992a), but a poor outcome for children with comorbidity has been reported in previous studies (McGee et al., 1990; Newman et al., 1996).

In boys with co-occurring internalising and externalising problems, comorbidity seems to change the outcome of the internalising syndrome by influencing the later development of psychopathology towards externalising problems and worsening the prognosis. This is in accordance with Rutter's (1970) early argument that comorbidity in childhood is closer to externalising than internalising syndrome.

Results indicate that co-occurring externalising symptoms might not have as harmful an impact on the outcome of girls' internalising syndrome, but as mentioned above, these results are more speculative due to the small number of externalising girls. To understand the complex dynamics of comorbidity better and to be able to plan effective preventive measures and successful interventions, there is a need for further longitudinal research.

Study I highlights the importance of identifying co-occurring internalising and externalising problems. Teachers might miss the internalising problems of children who also act out, leading to misunderstandings as to why a pupil behaves as he or she does. The pupil might be blamed instead of supported, which might arouse feelings of failure. Lack of support is likely to have negative effects on pupils' future mental well-being and development, as comorbid problems have a poor prognosis over time. Teachers should be alerted to observe pupils' problems and to acknowledge their needs. As indicated in Study II, working for a better classroom climate might be one way of affecting the adjustment of children with emotional and behavioural problems positively.

9.2.2. The classroom climate is important for children's mental well-being (Study II)

The findings of Study II support earlier research that an association exists between a poor classroom climate and students' mental health problems (Kellam et al., 1994 and 1998; Klicpera et al, 1995; Russell and Russell, 1996; Mooij, 1999). This association is present both for emotional and behavioural problems and for boys and girls. The finding indicates that, at least in the sixth grade, a healthy classroom environment is likely to benefit all pupils, not only a subgroup of them.

When emotional and behavioural problems were predicted by earlier problems and the present classroom climate, the figures show that earlier problems are strong predictors of later ones (Study II: Tables 1-3), a finding also made by several other studies (Stanger et al., 1992; Achenbach et al., 1995; Rubin et al., 1995). This was especially true as regards boys' externalising and total problems, while classroom climate explained about the same amount of variance in boys' and girls' internalising problems as did their earlier problems. These figures are, however, only estimates because we could not control the effect of earlier classroom climate and because classroom climate and children's problems influence each other.

It is easy to understand how externalising behaviour contributes to a poor classroom climate, as pupils' disruptive behaviours are likely to increase classroom restlessness and negatively affect working conditions during lessons. On the other hand, a poor climate might perpetuate externalising behaviour by encouraging the formation of a subculture

of poorly behaving pupils. Boys' externalising behaviour in the second grade affected the classroom climate in the sixth grade, while girls' problems did not. Accordingly, it seems that boys' problem behaviour affects their environment more strongly than girls'. However, girls' symptoms in the sixth grade were pronounced if they had had emotional and behavioural problems in the second grade and the present classroom climate was poor. This particularly seems to apply to externalising behaviour. Thus, earlier externalising problems seem to leave girls more prone to act out at a later age if the classroom is restless and less constructive in early adolescence.

Internalising problems among boys or girls in the second grade did not contribute to the climate in the sixth grade. This implies that causality might run in the poor classroom climate to internalising problem direction more strongly than vice versa. A poor classroom climate might hamper the establishment of friendships, especially for pupils with internalising problems.

Study II suggests that girls are particularly vulnerable to the negative effects of a poor classroom climate. This is in contrast to earlier studies, which suggest a stronger relationship between classroom and school climate and boys' rather than girls' problems (Kellam et al., 1994 and 1998; Kuperminc et al., 1997), We might be dealing with a cultural change in Finnish society. Recent Finnish studies have shown that smoking and drinking, i.e. externalising behaviours, have increased especially among adolescent girls (Rimpelä et al., 1987; Rimpelä et al., 1996; Hermanson et al., 1998; Lintonen et al., 2000). Early adolescence is a time when peer pressure for conformity sets in (Berndt, 1979). If the classroom climate is poor, it might mean allying with poorly behaving pupils. Girls with former externalising problems might readily affiliate with oppositional behaviours in the classroom. The same effect should then be seen in boys a year or two later, because boys lag behind in pubertal development.

Study II suggests that the classroom climate is important for children's mental well-being. Nevertheless, longitudinal research is needed to confirm the direction of causality between classroom climate and children's emotional and behavioural problems. Although interventions in the classroom are known to affect children's aggressive behaviour favourably over time (Kellam et al, 1994 and 1998; Mooij, 1999), only a few longitudinal studies on classroom climate are available.

The concept of a "health-promoting school" reflects the philosophical change from health education that took place in classrooms towards a more holistic goal to promote health in schools (Jakonen et al., 2000; Weare, 2000a and 2000b). School projects aiming at health promotion have been initiated by Koivu and Laukkanen (1998) and Patton et al. (2000), among others. Knowledge about climate aspects in the school environment is essential when health-promoting schools are designed (Weare, 2000a and 2000b). Measures are taken both on school and classroom levels to enhance the quality of social and learning environments in secondary schools. Study II provides further documentation of the importance of seeing schools as social systems.

9.3. Consequences of school budget cuts on children's school environment, mental well-being and equality in education

9.3.1. Budget cuts affect material and human resources in Finnish schools (Studies III, IV)

According to teachers' evaluations, cuts in school budgets in Finland in the early 1990s caused fairly extensive changes in schools (Study III). Both mainstream education and special services were affected. Material resources were decreased in almost 90% of all classes, while group size increased and psychological counselling decreased in about 40% of all classes.

A considerable gap was found between the need for and access to special services because of budget cuts (Study IV). This was largest in remedial instruction (53.7%), somewhat smaller in special education (43.5%) and smallest in psychological counselling (9.6%). The figures mentioned concern pupils needing the respective services. When the figures are related to all pupils, the lack of remedial instruction services caused by budget cuts affect 19.4%, the lack of special education services 6.7% and the lack of psychological counselling services 2.0%. The findings are consistent with those of other Finnish studies concerning the same time period (Meriläinen, 1996; Niemi and Ojala, 1996; Tuunainen and Ihatsu, 1996). An additional portion of pupils were left without services for other reasons; this portion was largest in psychological counselling (13.9% of pupils needing counselling/ 2.9% of all pupils).

Schools had to adapt to an unplanned-for situation. Our findings indicate that this situation was especially alarming for those pupils needing extra support. Lack of resources because of budget cuts was the main reason for denied access to educational special services, while other reasons were the most important in not to receiving psychological counselling.

9.3.2. School budget cuts impair the learning environment and are related to girls' externalising problems (Study III)

Teachers assessed that changes which affected human resources, i.e. an increase in group size and cuts in psychological counselling services, had more negative effects than cuts in material resources. After an earlier period of increasing school budgets, there may have been a reserve of teaching material at least in some schools, and with regard to material resources, it seems that Finnish schools did not fall below the critical level suggested by Rutter (1980). However, human resources at school are likely to be more important for the well-being of pupils than material ones. Schools are social systems where work is done in interaction with others. If a pupil cannot get the guidance and support needed from school staff, it is not likely that this lack of support could be helped by material resources.

Larger group sizes rendered the work in classrooms more difficult in many ways, and both teachers and pupils were affected. A considerable number of teachers were highly distressed by diminished opportunities to tutor pupils individually. This concern is understandable as the teacher's main task of carrying out effective teaching was hampered, which must have been frustrating. Indeed, teachers' experiences of their work were negatively affected and they also complained of health problems. However, budget cuts did not affect pupils' self-reported interest in schoolwork. One explanation for this might be that teachers acted as buffers between the pupils and the decrease in resources.

There are indications that enlargement of educational groups contribute to the psychiatric morbidity of pupils, especially girls: girls seem to react with externalising symptoms. Girls

emerged as the more vulnerable gender, which was also seen in Study II. This is in contrast to the finding of Rutter (1983) and Kellam et al. (1998); however, it is in line with recent studies on Finnish young people, which have shown that smoking and drinking, i.e. externalising behaviours, have increased especially among girls (Rimpelä et al., 1987; Rimpelä et al., 1996; Hermanson et al., 1998; Lintonen et al., 2000). The issue requires further investigation.

Cuts in psychological counselling services were also associated with girls' externalising problems. Again, girls emerged as the vulnerable gender. The finding suggests that girls in early puberty need adult support at school, but it further raises the question of what changes are occurring in girls' developmental environments. More research is needed on this issue.

Even the classroom climate was negatively affected by the increase in the size of educational groups. Probably, this was a consequence of pupils' increased restlessness and teachers' management problems in the classroom. This finding is notable, as Study II of this thesis as well as other recent studies (Kellam et al., 1994 and 1998; Russell and Russell, 1996; Mooij, 1999) suggest that the classroom climate is important not only for children's academic achievements but also for their mental well-being. Study III emphasises that external circumstances, like a nation-wide economic recession with concomitant budget cuts, may be reflected in the school environment and may compromise working conditions and relationships in classrooms.

9.3.3. The economic recession is likely to increase inequality in education (Study IV)

Equality in education has been a goal in Finnish educational policy. In Study IV, the issue was studied by investigating pupils' access to special services during an economic recession. Children's needs for special services were first studied in relation to personal and family factors. Then, the selection of pupils for these services, in times when the supply of these services had been reduced, was studied in relation to the same factors.

Children's needs for educational special services, i.e. remedial instruction and special education, are associated with both personal and family factors. Of the family factors, lower family SES and parental involvement stand out as two important factors for children's school performance. A lower family SES is a risk factor for children's needs for both kinds of educational special services, which supports earlier findings (Nader et al., 1981; Offord et al., 1985; Lipman et al., 1994). Parental involvement was significant even when parental unemployment and family SES were controlled for. The result emphasises the importance of parent-teacher co-operation in schools. Lower family SES cannot be influenced by teachers, but a fruitful co-operation between parents and teachers should be encouraged.

Many personal factors also increase the need for educational special services. Male gender predicts the need for special education, although not for remedial instruction. Study IV, as well as other studies (Rutter et al, 1976; Ackerman et al., 1983; McLeskey and Waldron, 1990), indicates that boys have more specific learning problems than girls. It is understandable that the need for remedial instruction is not related to gender, as boys and girls are equally likely to confront problems which bring about transient learning problems, e.g. transient absences from school. Pupils' disengagement from their work is strongly related to their need for both kinds of educational support. This finding raises the question of how pupils could best be motivated in their schoolwork.

Children's psychiatric problems and learning difficulties are known to be interrelated (Prior et al., 1999). Psychiatric problems compromise children's cognitive and social capacities, interfering with their schoolwork. According to findings of Study IV, internalising symptoms predicted a child's educational needs even when individual engagement was controlled for; this was not so for externalising symptoms. Consequently, children with internalising problems seem to have problems with the learning process itself, while motivational issues interfere more strongly with the learning process of pupils with externalising problems.

In contrast to educational special services, the need for psychological counselling services was predicted only by personal factors, that is, male gender, below average academic achievement and lower engagement in schoolwork. In agreement with Cohen et al. (1993) and Fombonne (1994), Study IV indicates a male preponderance in externalising problems, which contributes to boys' greater need for counselling. These findings together with others (Bender, 1987; Chapman, 1988; Prior et al., 1999) highlight how closely related academic achievement and motivational issues are to pupils' mental health.

Equality in education seems hard to achieve. Vanttaja (2000) shows that the best achieving secondary school graduates in the 1970s, 1980s and 1990s came from higher socio-economic backgrounds despite the introduction of the comprehensive school system in the 1970s. Furthermore, boys from upper socio-economic classes with the wealthiest and best educated parents were most likely to end up in well-paid white-collar positions ten years after graduation (Vanttaja, 2000).

Study IV examines equality in education among primary schoolchildren. During the recession years there was a substantial and alarming shortage of educational and psychosocial services in Finnish schools. Our findings suggest that inequality in education was aggravated, as the selection process for the scanty services was, indeed, biased in several respects.

The selection bias for psychosocial services indicates that children with internalising problems are less likely to be referred for counselling the more symptoms they have. This is surprising, especially as children's symptoms in Study IV are reported by the teachers themselves. It might imply that teachers do not comprehend the nature of internalising symptoms. An American study reveals that depressed children might elicit negative attitudes in teachers (Mullins et al., 1995), which might explain the negative correlation. Another explanation might be that internalising children may be quiet and easy, which leads teachers to think that they do not need support. It is noteworthy that the lack of access to counselling was mostly due to factors other than budget cuts, e.g. personal or family refusal to accept counselling. However, compliance to treatment is usually higher in internalising than in externalising problems (Ikäheimo et al., 1999).

Several factors biased selection for educational services. Girls were preferred over boys for remedial instruction lessons, which are given by the class teachers themselves. Teachers might consider girls more co-operative and pleasant to teach.

Higher achievers gained access to remedial instruction and those who were more engaged in their schoolwork received special education more often than others. There was also a tendency for teachers to select children from higher socio-economic backgrounds to remedial instruction more often than their less fortunate classmates. The findings might reveal prevailing attitudes in schools. Pupils with adverse backgrounds may both be expected and accepted to fare worse, while pupils with more affluent families and better capacities get supportive attention when they have problems. Teachers might also believe that pupils from favourable backgrounds benefit more from support.

Children of unemployed mothers comprise the one exception to the rule of referring more resourceful pupils for special services. During the recession years there was a

general concern in the mass media about the consequences of unemployment for individuals and families. Teachers might have become alerted to this situation, and to counteract the weaker home situation, gave more help to these children at school. They might have been more aware of mothers' than of fathers' unemployment, as mothers are more likely to cooperate with schools than fathers. It seems that teachers were ready to tackle a problem when they were confronted with it. This suggests that the selection bias revealed in Study IV is a spontaneous one, rather than a conscious decision. It highlights the importance of discussing pupils' problems as well as the selection process openly.

The decrease in special services during the recession years was alarming. The educational opportunities became compromised, particularly for those children who were most vulnerable at the outset. This created more risk factors for these children. The incidence for behavioural and emotional problems is known to increase significantly when the number of risk factors increases (Rae-Grant et al., 1989; Grizenko and Fisher, 1992). This will indeed be the case if children needing support are left alone with their problems.

10. CONCLUSIONS

The main conclusions of this thesis on the well-being of children in the school environment are as follows:

1. Teachers should be alerted to observing co-occurring problems in their pupils, particularly the internalising problems of children who also act out. Boys, in particular, are burdened with this kind of problem and they need their teachers' support.
2. Schools are important social systems and the classroom climate is important for children's mental well-being. School authorities should therefore pay attention to atmospheric aspects when decisions on the organisation of schools are made.
3. Girls, at least in early puberty, seem to be particularly vulnerable to factors in the social school environment. This raises the question of what has changed in girls' developmental environments. More research is needed on this issue.
4. School budget cuts that affected human resources had more negative effects than cuts in material ones. This is understandable as schoolwork happens in interaction with others. School staff is needed to educate, guide and support pupils.
5. It is important to pay attention to teachers' well-being in times of economic recession. Teachers complain of both mental and physical problems, and apparently, they may even serve as buffers between pupils and the decrease in resources. They need support to accomplish their task as educators.
6. Children's inequality in education, from the point of view of children needing special services, was aggravated during the economic recession. However, it seems that teachers' selection of pupils for supportive services was more a spontaneous than a conscious decision. Open discussion of the pupil's overall situation and of the teacher's role in the selection process is needed to improve children's equality in education.
7. Child psychiatric school research combines educational, social, psychological and medical sciences. Children's social background, the educational school environment and personal factors together influence pupils' mental well-being and need for support. Many unanswered questions remain in this field of research: e.g. comorbid disorders in the school environment, especially with a focus on girls, and classroom climate effects on the mental well-being of boys and girls at different grade levels and from a longitudinal perspective are issues that require further elucidation. It would be important to study these as well as other issues with a broad perspective across the different sciences.

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12. REFERENCES

AAUW Report. How schools shortchange girls. New York: Marlowe & company,1995.

Achenbach TM. Manual for the Teacher's Report Form and 1991 profile. Burlington, VT: University of Vermont Department of Psychiatry, 1991a.

Achenbach, TM. Manual for the Youth Self-Report and 1991 Profile. Burlington, VT: University of Vermont Department of Psychiatry, 1991b.

Achenbach TM, Howell CT, McConaughy SH, Stanger C. Six-year predictors of problems in a national sample of children and youth: I. Cross-informant syndromes. J Am Acad Child Adolesc Psychiatry 1995;34:336-347.

Achilles CM, Finn JD, Bain HP. Using class size to reduce the equity gap. Educational Leadership 1998;55:40-43.

Ackerman P, Dykman R, Oglesby D. Sex and group differences in reading and attention disordered children with and without hyperkinesis. Journal of Learning Disability 1983;16:407-415.

Aiken LS, West SG. Multiple regression: Testing and interpreting interactions. Newbury Park: Sage Publications; 1991.

Almqvist F, Ikäheimo K, Kumpulainen K, Tuompo-Johansson E, Linna S-L, Puura K et al. Design and subjects of a Finnish epidemiological study on psychiatric disorders in childhood. Eur Child Adolesc Psychiatry 1999;8(Suppl. 4):3-6.

Anderson JC, Williams S, McGee R, Silva PA. DSM-III disorders in preadolescent children. Prevalence in a large sample from the general population. Arch Gen Psychiatry 1987;44:69-76.

Asano MM. A follow up study of children with Get Set Day Care and prekindergarten Head Start experience who enrolled in the school district of Philadelphia, Fall, 1978 & 1980. ERIC Document 1986; ED 270216.

Astone NM, McLanahan SS. Family structure, parental practices and high school completion. American Sociological Review 1991;56:309-320.

Baker JA. The social context of school satisfaction among urban, low-income, African-American students. School Psychology Quarterly 1998;13:25-44.

Battistich V, Solomon D, Dong-il K, Watson M, Schaps E. Schools as communities, poverty levels of student populations, and students' attitudes, motives, and performance: A multilevel analysis. American Educational Research Journal 1995;32:627-658.

Bender WN. Behavioral indicators of temperament and personality in the inactive learner. Journal of Learning Disabilities 1987;20:301-305.

Berndt TJ. Developmental changes in conformity to peers and parents. Developmental Psychology 1979;15:608-616.

Boozer M, Rouse C. Intraschool variation in class size: patterns and implications. Working Paper No. 5144. National Bureau of Economic research, 1995.

Briggs F, Hawkins RMF. Low socio-economic status children are disadvantaged in the provision of school-based child protection programmes. British Journal of Social Work 1996;26:667-678.

Brophy JE, Good TL. Teacher-student relationships. Causes and consequences. New York: Holt, Rinehart and Winston, Inc, 1974.

Bryant DM, Burchinal M, Lau LB, Sparling JJ. Family and classroom correlates of Head Start children's developmental outcomes. Early Childhood Research Quarterly 1994;9:289-309.

Buddeberg-Fischer B, Klaghofer R, Leuthold A, Buddeberg C. Unterrichtsklima und Symptombildungen. Zusammenhänge zwischen Schulstress, Kohärenzgefuehl und physischen/psychischen Beschwerden von Gymnasten. Psychother Psychosom med Psychol 2000;50:222-229.

Cahen LS, Filby N, McCutcheon G, Kyle D. Class size and instruction. New York: Longman, 1983.

Caron C, Rutter M. Comorbidity in child psychopathology: concepts, issues and research strategies. J Child Psychol Psychiatry 1991;32:1063-1080.

Chapman JW. Cognitive-motivational characteristics and academic achievement of learning disabled children: A longitudinal study. Journal of Educational Psychology 1988;80:357-365.

Cheng YC. Classroom environment and student affective performance: an effective profile. Journal of Experimental Education 1994;62:221-239.

Chiles JA, Miller ML, Cox GB. Depression in an adolescent delinquent population. Arch Gen Psychiatry 1980;37:1179-1184.

Cohen P, Cohen J, Kasen S, Velez CN, Hartmark C, Johnson J, Rojas M, Brook J, Streuning EL. An epidemiological study of disorders in late childhood and adolescence - I. Age- and gender-specific prevalence. J Child Psychol Psychiatry 1993;34:851-867.

Cole DA, Carpentieri S. Social status and the comorbidity of child depression and conduct disorder. J Consult Clinical Psychol 1990;58:748-757.

Coleman JS, Campbell EQ, Hobson CJ, McPartland J, Mood AM, Weinfeld FD, York RL. Equality of educational opportunity. Washington: U.S. Government Printing Office, 1966.

Coleman JS. Equality and achievement in education. San Fransisco: Westview Press, 1990.

Collins RC. Head Start: A review of research with implications for practice in early childhood education. ERIC Document 1984;ED 245833.

Conger RD, Elder GH Jr. Families in troubled times. Adapting to change in rural America. New York: Aldine de Gruyter, 1994.

Earthman GI, Lemasters L. Where children learn. A discussion of how facility affects learning. ERIC Document 1998; ED 419368.

Elander J, Rutter M. Use and development of the Rutter Parents' and Teachers' Scales. International Journal of Methods in Psychiatric Research 1996;6:63-78.

Elder GH. Children of the great depression. Social change in life experience. Chicago: University of Chicago Press, 1974.

Engelmann S, Becker WC, Carnine D, Gersten R. The direct instruction Follow Through model: design and outcomes. Education and Treatment of Children 1988;11:303-317.

Esser G, Schmidt MH, Woerner W. Epidemiology and course of psychiatric disorders in school-age children - results of a longitudinal study. J Child Psychol Psychiatry 1990;31:243-263.

Farnworth M, Schweinhart LJ, Berrueta-Clement JR. Preschool intervention, school success and delinquency in a high-risk sample of youth. American Educational Research Journal 1985; 22: 445-464.

Ferdinand RF, Verhulst FC, Wiznitzer M. Continuity and change of self-reported problem behaviors from adolescence into young adulthood. J Am Acad Child Adolesc Psychiatry 1995;34:680-690.

Finn JD, Achilles CM, Pate Bain H et al. Three years in a small class. Teaching & Teacher Education 1990;6:127-136.

Flanagan CA, Eccles JS. Changes in parents' work status and adolescents' adjustment at school. Child Development 1993;64:246-257.

Fombonne E. The use of questionnaires in child psychiatry research: Measuring their performance and choosing an optimal cut-off. J Child Psychol Psychiatry 1991;32: 677-693.

Fombonne E. The Chartres study: I. Prevalence of psychiatric disorders among French school-aged children. Br J Psychiatry 1994;164:69-79.

Fraser BJ. Classroom environment. London: Croom Helm; 1986.

Fraser BJ. Two decades of classroom environment research. In: Fraser BJ, Walberg HJ, editors. Educational environments. Evaluation, antecedents and consequences. Oxford: Pergamon Press; 1991. p. 3-27.

Fraser BJ, Fisher DL. Predicting students' outcomes from their perceptions of classroom psychosocial environment. American Educational Research Journal 1982;19:498-518.

Fraser BJ, Pearse R, AZMI. A study of Indonesian students' perceptions of classroom psychosocial environment. International Review of Education 1982;28:337-355.

Galluzzi EG, Kirby EA, Zucker KB. (1980) Students' and teachers' perceptions of classroom environment and self- and others-concepts. Psychol Rep 1980;46:747 - 753.

Garralda ME, Bailey D. Child and family factors associated with referral to child psychiatrists. Br J Psychiatry 1988;153:81-89.

Gersten R, Keating T, Becker W. The continued impact of the direct instruction model: longitudinal studies of Follow Through students. Education and Treatment of Children 1988;11:318-327.

Ghodsian M, Fogelman K, Lambert L, Tibbenham A. Changes in behaviour ratings of a national sample of children. British Journal of Social and Clinical Psychology 1980;19:247-256.

Glass GV, Cahen LS, Smith ML, Filby NN. School class size, research and policy. Beverly Hills: Sage, 1982.

Green L. Possible gender bias within teacher's perception of pupils with special needs. Support for Learning 1993;8:77-80.

Grizenko N, Fisher C. Review of studies of risk and protective factors for psychopathology in children. Can J Psychiatry 1992;37:711-721.

Haertel GD, Walberg HJ, Haertel EH. Socio-psychological environments and learning: a quantitative synthesis. British Educational Research Journal 1981;7:27-36.

Hanushek EA. The economics of schooling: production and efficacy in public schools. Journal of Economic Literature 1986;26:1141-1177.

Hanushek EA. School resources and student performance. In: Burtless G, ed. Does money matter? The effect of school resources on student achievement and adult success. Washington DC: Brookings Institution Press, 1996:43-73.

Hanushek EA, Rivkin SG, Taylor LL. Aggregation and the estimated effects of school resources. Cambridge, MA: National Bureau of Economic Research, 1996.

Harrington R, Fudge H, Rutter M, Pickles A, Hill J. Adult outcomes of childhood and adolescent depression: II. Links with antisocial disorders. J Am Acad Child Adolesc Psychiatry 1991;30:434-439.

Hastie PA, Saunders JE. Effects of class size and equipment availability on student involvement in physical education. Journal of Experimental Education 1991;59:212-224.

Havlínová M, Schneiderová D. Stress characteristics in schoolchildren related to different educational strategies and school climates. Centr Eur J Publ Hlth 1995;3:205-209.

Heikkilä M, Sihvo T, Valtonen H, Osadchaya G, Kovalev V, Vasiliev V. Unemployment, social protection and families with children in the Russian Federation and in Finland. Ministry of Social Affairs and Health Publications 28. Helsinki: Ministry of Social Affairs and Health, 1997.

Helmke A, Renkl A. Unaufmerksamkeit in Grundschulklassen: Problem der Klasse oder des Lehrers? Zeitschrift fuer Entwicklungspsychologie und Pädagogische Psychologie, 1993;25:185-200.

Henning-Stout M. The relationship between teachers' perceptions of girls' and boys' behaviors and referral for special education. Special Services in the Schools 1993;7:91-105.

Hermanson E, Karvonen S, Sauli H. Lasten ja nuorten hyvinvointi ja terveys Suomessa - Valtakunnalliset trendit 1990-luvulla. Osa I.(Well-being and health of children and youth in Finland - National trends in the 1990s.Part I; in Finnish) Statistical report 13/1998 . Helsinki: National Research and Development Center for Welfare and Health, 1998

Herrington CD. Legislative updates: Florida. Journal of Education Finance 1998;24:263-272.

Hoge DR, Smit EK, Hanson SL. School experiences predicting changes in self-esteem of sixth- and seventh-grade students. Journal of Educational Psychology 1990;82:117-127.

House ER, Glass GV, McLean LD, Walker DF. No simple answer: Critique of the Follow Through evaluation. Harvard Educational Review 1978;48:128-160.

Ikäheimo K. Lastenpsykiatrinen hoitoonohjautumisprosessi (The child psychiatric referral process; in Finnish). Turku: Annales Universitatis Turkuensis, 1999.

Jakonen S, Turunen H, Tossavainen K, Salomäki U, Vertio H. Euroopan terveet koulut, yhteisöllinen koulun terveyden edistämisen hanke (Healthy schools in Europe, a community project to promote health in schools; in Finnish). Promo 2000;12:21-23.

Jencks C, Smith M, Acland H, Bane MJ, Cohen D, Gintis H, Heyns B, Michelson S. Inequality: a reassessment of the effects of family and schooling in America. Harmondsworth: Penguin Books, 1972.

John LH, Offord DR, Boyle MH, Racine YA. Factors predicting use of mental health and social services by children 6-16 years old: Findings from the Ontario child health study. Am J Orthopsychiatry 1995;65:76-86.

Kasen S, Johnson J, Cohen P. The impact of school emotional climate on student psychopathology. J Abnorm Child Psychol 1990;18:165-177.

Kashani JH, Beck NC, Hoeper EW, Fallahi C, Corcoran CM, McAllister JA, Rosenberg TK, Reid JC. Psychiatric disorders in a community sample of adolescents. Am J Psychiatry 1987;144:584-589.

Kashani JH, McGee RO, Clarkson SE, Anderson JC, Walton LA, Williams S, Silva PA, Robins AJ, Cytryn L, McKnew DH. Depression in a sample of 9-year-old children. Arch Gen Psychiatry 1983;40:1217-1223.

Kellam SG, Ling X, Merisca R, Brown CH, Ialongo N. The effect of the level of aggression in the first grade classroom on the course and malleability of aggressive behavior into middle school. Development and Psychopathology 1998;10:165-185.

Kellam SG, Rebok GW, Ialongo N, Mayer LS. The course and malleability of aggressive behavior from first grade into middle school: Results of a developmental epidemiologically-based preventive trial. J Child Psychol Psychiatry 1994;35:259-281.

Kirjavainen T. Kunnallisten peruskoulujen taloudesta vuosina 1980-93. (On the economies of municipal comprehensive schools; in Finnish) In: Jakku-Sihvonen R, Lindström A, Lipsanen S, eds. Toteuttaako peruskoulu tasa-arvoa? (Is equality accomplished in comprehensive schools?; in Finnish). Helsinki: Educational Government, 1996: 68-99.

Kirjavainen T, Loikkanen HA. School resources and student achievement: evidence from Finnish senior secondary schools. Helsinki: Government Institute for Economic Research., 1995.

Klicpera C, Gasteiger Klicpera B, Schabmann A. Wieweit tragen schul- bzw. klassenspezifische Faktoren zur Aggression an den Schulen bei? Z Kinder Jugendpsychiatr 1995;23:243-254.

Koivu A, Laukkanen E (Eds). Kouluyhteisö nuoren kasvun ja kehityksen tukijana - koulun yhteisyyden kehittämiskokeilu 1995-1998. (A school community supporting the growth and development of young people - a trial on developing the school community in 1995-1998; in Finnish) Kuopio: Publication series of the Hospital District of Northern Savo No 49, 1998.

Koot, HM, Verhulst FC. Prediction of children's referral to mental health and special education services from earlier adjustment. J Child Psychol Psychiatry 1992;33:717-729.

Kovacs M, Paulauskas S, Gatsonis C, Richards C. Depressive disorders in childhood. III. A longitudinal study of comorbidity with and risk for conduct disorders. J Affective Disord 1988;15:205-217.

Kuperminc GP, Leadbeater BJ, Emmons C, Blatt SJ. Perceived school climate and difficulties in the social adjustment of middle school students. Applied Developmental Science 1997; 1:76-88.

Krueger RF, Caspi A, Moffit TE, Silva PA, McGee R. Personality traits are differentially linked to mental disorders: a multitrait - multidiagnosis study of an adolescent birth cohort. J Abnorm Psychol 1996;105:299-312.

Lawton SB. Trends in Canadian educational expenditures: Is the worst over? Journal of Education Finance 1998;24:220-236.

Lintonen T, Rimpelä M, Ahlström S, Rimpelä A, Vikat A. Trends in drinking habits among Finnish adolescents from 1977 to 1999. Addiction 2000;95:1255-1263.

Lipman EL, Offord DR, Boyle MH. Relation between economic disadvantage and psychosocial morbidity in children. Can Med Assoc J 1994;151:431-437.

Ludwig J, Bassi LJ. The puzzling case of school resources and student achievement. Educational Evaluation and Policy Analysis 1999;21:385-403.

Marriage K, Fine S, Moretti M, Haley G. Relationship between depression and conduct disorder in children and adolescents. Journal of the American Academy of Child Psychiatry 1986;25:687-691.

Martinez VJ, Godwin RK, Kemerer FR, Perna L. The consequences of school choice: Who leaves and who stays in the inner city. Social science quarterly 1995;76:487-501.

Mattison RE, Morales J, Bauer ED. Adolescent schoolboys in SED classes: Implications for child psychiatry. J Am Acad Child Adolesc Psychiatry 1993;32:1223-1228.

McConaughy SH, Achenbach TM. Comorbidity of empirically based syndromes in matched general population and clinical samples. J Child Psychol Psychiatry 1994;35:1141-1157.

McConaughy SH, Skiba RJ. Comorbidity of externalizing and internalizing problems. School Psychology Review 1993;22:421-436.

McConaughy SH, Stanger C, Achenbach TM. Three-year course of behavioral/emotional problems in a national sample of 4- to 16-year-olds: I. Agreement among informants. J Am Acad Child Adolesc Psychiatry 1992;5:932-940.

McGee R, Feehan M, Williams S, Anderson J. DSM-III disorders from age 11 to age 15 years. J Am Acad Child Adolesc Psychiatry 1992;31:50-59.

McGee R, Feehan M, Williams S, Partridge F, Silva PA, Kelly J. DSM-III disorders in a large sample of adolescents. J Am Acad Child Adolesc Psychiatry 1990;29:611-619.

McGiverin J, Gilman D, Tillitski C. A meta-analysis of the relation between class size and achievement. The Elementary School Journal 1989;90:47-56.

McLeskey J, Waldron NL (1990). The identification and characteristics of students with learning disabilities in Indiana. Learning Disabilities Research 1990;5:72-78.

Meriläinen L. Oppilaiden ja opiskelijoiden tukipalvelut. (Support services of students; in Finnish) In: Blom H, Laukkanen R, Lindström A, Saresma U, Virtanen P, eds. Erityisopetuksen tila. (State of special education; in Finnish). Helsinki: Educational Government, 1996:459-473.

Mooij T. Pupil-class determinants of aggressive and victim behaviour in pupils. Br J Educ Psychol 1998;68:373-385.

Mooij, T. Promoting prosocial pupil behaviour: 2-Secondary school intervention and pupil effects. Br J Educ Psychol 1999;69:479-504.

Mullins LL, Chard SR, Hartran VL, Bowlby D, Rich L, Burke C. The relationship between depressive symptomatology in school children and the social responces of teachers. Journal of Clinical Child Psychology 1995;24:474-482.

Nader PR, Ray L, Brink SG. The new morbidity: Use of school and community health care resources for behavioral, educational and social-family problems. Pediatrics 1981;67:53-60.

Nelson G. The relationship between dimensions of classroom and family environments and the self-concept, satisfaction, and achievement of grade 7 and 8 students. Journal of Community Psychology 1984;12:276-287.

Newman DL, Moffitt TE, Caspi A, Magdol L, Silva PA, Stanton WR. Psychiatric disorder in a birth cohort of young adults: prevalence, comorbidity, clinical significance, and new case incidence from ages 11 to 21. J Consult Clinical Psychol 1996;64:552-562.

Niemi EK, Ojala M-L. Peruskouluopetuksen saavutettavuus. (Obtainability of comprehensive school education; in Finnish) In: Jakku-Sihvonen R, Lindström A, Lipsanen S, eds. Toteuttaako peruskoulu tasa-arvoa? (Is equality accomplished in comprehensive schools; in Finnish). Helsinki: Educational Government, 1996: 225-234.

Offord DR, Boyle MH, Racine Y. Ontario child health study: correlates of disorder. J Am Acad Child Adolesc Psychiatry 1989;28:856-860.

Offord DR, Boyle MH, Racine YA, Fleming JE, Cadman DT, Munroe Blum, H et al. Outcome, prognosis and risk in a longitudinal follow-up study. J Am Acad Child Adolesc Psychiatry 1992;31:916-923.

Offord DR, Last JM, Barrette PA. A comparison of the school performance, emotional adjustment and skill development of poor and middle-class children. Can J Public Health 1985;76:174-178.

Orvaschel H, Lewinsohn PM, Seeley JR. Continuity of psychopathology in a community sample of adolescents. J Am Acad Child Adolesc Psychiatry 1995;34:1525-1535.

Ouston J, Maughan B, Mortimore P. School influences. In: Rutter M (Ed) Scientific foundations of developmental psychiatry. London: Medical Books Limited, 1980:67-76.

Pagani L, Boulerice B, Vitaro F, Tremblay RE. Effects of poverty on academic failure and delinquency in boys: A change and process model approach. J Child Psychol Psychiatry 1999;40:1209-1219.

Patton GC, Glover S, Bond L, Butler H, Godfrey C, Di Pietro G, Bowes G. The Gatehouse Project: a systematic approach to mental health promotion in secondary schools. Aust N Z J Psychiatry 2000;34:586-593.

Prior M, Smart D, Sanson A, Oberklaid F. Relationships between learning difficulties and psychological problems in preadolescent children from a longitudinal sample. J Am Acad Child Adolesc Psychiatry 1999;38:429-436.

Puig-Antich J. Major depression and conduct disorders in prepuberty. Journal of the American Academy of Child Psychiatry 1982;21:118-128.

Purkey SC, Smith MS. Effective schools:A review. The Elementary School Journal 1983; 83:427-452.

Puura K, Almqvist F, Tamminen T, Piha J, Kumpulainen K, Räsänen E, Moilanen I, Koivisto A-M. Children with symptoms of depression - what do adults see? J Child Psychol Psychiatry 1998;39:1-9.

Rae-Grant N, Thomas BH, Offord DR, Boyle MH. Risk, protective factors and the prevalence of behavioral and emotional disorders in children and adolescents. J Am Acad Child Adolesc Psychiatry 1989; 28:262-268.

Rimpelä M, Jokela J, Luopa P et al. Kouluterveys 1996-tutkimus: Kouluviihtyvyys, terveys ja tottumukset. Perustulokset yläasteilta ja kaupunkien väliset erot. (Health and school 1996: school satisfaction, health and health habits. Results from secondary schools and differences between towns; in Finnish). Stakes, Aiheita 40/1996.

Rimpelä M, Rimpelä A, Karvonen S, Siivola M, Rahkonen O, Kontula O. Changes in health habits of young people in Finland in 1977-1987. Part I:Time, age and sex. Publications of the National Board of Health, Finland. Series Original Reports 7/1987.

Rinne R, Vuorio-Lehti M. Tasa-arvon suuri masuuni: muistutuksia 1960-ja 70-lukujen peruskoulukeskustelusta (The great blast furnace of equality: reminders of topics dealing with comprehensive school from the 1960s and 70s; in Finnish). In: Jakku-Sihvonen R, Lindström A, Lipsanen S, eds. Toteuttaako peruskoulu tasa-arvoa? (Is equality accomplished in comprehensive schools; in Finnish). Helsinki: Educational Government, 1996.

Robinson, GE. Synthesis of research on class size. Educational Leadership 1990;47:80-90.

Rohde P, Lewihnsohn PM, Seeley JR. Comorbidity of unipolar depression: II. Comorbidity with other mental disorders in adolescents and adults. J Abnorm Psychol 1991;100:214-222.

Rubin KH, Xinyin C, McDougall P, Bowker A, Mckinnon J. The Waterloo Longitudinal Project: Predicting internalizing and externalizing problems in adolescence. Development and Psychopathology 1995;7:751-764.

Rudduck J. Developing a gender policy in secondary schools. Philapelphia: Open University Press, 1994, 10-11.

Russell TT, Russell DK. The relationships between childhood depression, perceptions of family functioning and perceptions of classroom social climate: Implications for school counselors. ERIC Document 1996; ED 396197.

Rutter M. A children's behaviour questionnaire for completion by teachers: preliminary findings. J Child Psychol Psychiatry 1967;8: 1-11.

Rutter M. Isle of Wight revisited: Twenty-five years of child psychiatric epidemiology. J Am Acad Child Adolesc Psychiatry 1970;28:633-653.

Rutter M. School influences on children's behaviour and development: The Kenneth Blackfan Lecture, Children's Hospital medical Center, Boston. Pediatrics 1980;65:208-220.

Rutter M. Stress, coping and development: Some issues and some questions. In: Garmezy N, Rutter M, editors. Stress, coping & development in children. New York: McGraw-Hill Book Company; 1983.

Rutter M. Comorbidity: concepts, claims and choices. Criminal Behaviour and Mental Health 1997;7: 265-285.

Rutter M, Graham P, Chadwick OFD, Yule W. Adolescent turmoil: fact or fiction? J Child Psychol Psychiatry 1976;17:35-56.

Rutter M, Maughan B, Mortimore P. Fifteen thousand hours. London: Open Books, 1979.

Ryan RM, Grolnick WS. Origins and pawns in the classroom: self-report and projective assessments of individual differences in children's perceptions. J Pers Soc Psychol 1986;50:550 -558.

Saari H, Kupari P. Missä peruskoulu säästi? (Which were the savings in comprehensive school?; in Finnish). In: Jakku-Sihvonen R, Lindström A, Lipsanen S, eds. Toteuttaako peruskoulu tasa-arvoa? (Is equality accomplished in comprehensive schools; in Finnish). Helsinki: Educational Government, 1996:100-106.

Salmi M, Huttunen J, Yli-Pietilä P. Lapset ja lama. (Children and the recession; in Finnish). Stakes. Reports 197. Helsinki, 1996.

Schmitt N, Sacco J, Ramey S, Ramey C, Chan D. Parental employment, school climate, and children's academic and social development. J Applied Psychol 1999;84:737-753.

Sclare I. Child psychology portfolio. London: Nfer-Nelson, 1997.

Simons-Morton BG, Davis Crump A, Haynie DL, Saylor KE. Student-school bonding and adolescent problem behavior. Health Education Research 1999;14:99-107.

Sourander A, Piha J. Parent, teacher, and clinical ratings on admission to child psychiatric inpatient treatment. A study of cross-informant correlations using CBCL, Rutter scales, and the CGAS. Nord J Psychiatry 1997;51:365-370.

S-PLUS 4 Guide to Statistics. Seattle: Data Analysis Products Division, MathSoft, 1997.

Stanger C, McConaughy SH, Achenbach TM. Three-year course of behavioral/emotional problems in a national sample of 4- to 16-year-olds: II. Predictors of syndromes. J Am Acad Child Adolesc Psychiatry 1992;31:941-950.

Tuunainen K, Ihatsu M. Erityisopetuksen organisoinnin kehityslinjat Suomessa (Developments in the organisation of special education in Finland; in Finnish). In: Blom H, Laukkanen R, Lindström A, Saresma U, Virtanen P, eds. Erityisopetuksen tila (State of special education; in Finnish). Helsinki: Educational Government, 1996:7-24.

Van der Sijde PC. Relationships of classroom climate with student learning outcomes and school climate. Journal of Classroom Interaction 1988;23:40-44.

Vanttaja M. Koulumenestyjien kotitausta, sosioekonominen asema ja tulotaso (Social background, socioeconomic status and income level of former school achievers; in Finnish). Yhteiskuntapolitiikka 2000;65:35-45.

Verhulst FC. Review of community studies. In: Verhulst FC, Koot HM, eds. The epidemiology of child and adolescent psychopathology. New York: Oxford University Press, 1995.

Verhulst FC, Akkerhuis GW. Agreement between parents' and teachers' ratings of behavioral/emotional problems of children aged 4-12. J Child Psychol Psychiatry 1989;30:123-136.

Verhulst FC, Althaus M. Persistence and change in behavioral/emotional problems reported by parents of children aged 4-14: an epidemiological study. Acta Psychiatr Scand 1988;77:suppl. 339.

Verhulst FC, Eussen ML, Berden GF, Sanders-Woudstra J, van der Ende J. Pathways of problem behaviors from childhood to adolescence. J Am Acad Child Adolesc Psychiatry 1993;31:924-931.

Verhulst FC, Koot HM, Berden GF. Four-year follow-up of an epidemiological sample. J Am Acad Child Adolesc Psychiatry 1990;29:440-448.

Verhulst FC, van der Ende J. Assessment of child psychopathology: relationships between different methods, different informants and clinical judgment of severity. Acta Psychiatr Scand 1991a;84:155-159.

Verhulst FC, van der Ende J. Four-year follow-up of teacher-reported problem behaviours. Psychol Med 1991b;21:965-977.

Verhulst FC, van der Ende J. Six-year developmental course of internalizing and externalizing problem behaviors. J Am Acad Child Adolesc Psychiatry 1992a;31:924-931.

Verhulst J, van der Ende J. Six-year stability of parent-reported problem behavior in an epidemiological sample. J Abnorm Child Psychology 1992b;20:595-611.

Verhulst FC, van der Ende J. "Comorbidity" in an epidemiological sample: a longitudinal perspective. J Child Psychol Psychiatry 1993;34:767-783.

Verhulst FC, van Wattum PJ. Two-year stability of self-reported problems in an epidemiological sample of adolescents. Acta Psychiatr Scand 1993;87:322-328.

Vogel SA. Gender differences in intelligence, language, visual-motor abilities, and academic achievement in students with learning disabilities: A review of the literature. Journal of Learning disabilities 1990;23:44-52.

Volanen MV. Oppimisen avaaminen sivistykselle (From learning to education; in Finnish). In: Mäkinen R, Poropudas O, eds. Irtiotto 90-luvun koulutuspolitiikasta. Koulutuspoliittinen artikkelikokoelma. (About the educational policy of the 1990s. A collection of articles). Turun yliopiston kasvatustieteellisen tiedekunnan julkaisuja B:67. Turku: Turun yliopiston kasvatustieteellinen tiedekunta, 2001.

Weare K. Promoting mental, emotional + social health. A whole school approach. London: Routledge, 2000a.

Weare K. Mielenterveys ja terve koulu. Ekoholistinen lähestymistapa mielenterveyden edistämiseen (Mental health and a healthy school. An eco-holistic approach towards the promotion of mental health; in Finnish). Promo 2000b;12:13-16.

Weintraub S. Personal communication, February 21, 2002.

Wierstra R. A study on classroom environment and on cognitive and affective outcomes of the PLON-curriculum. Studies in Educational Evaluation 1984;10: 273-282.

Wild K-P, Rost DH. Klassengrösse und Genauigkeit von Schuelerbeurteilungen. Zeitschrift fuer Entwicklungspsychologie und Pädagogische Psychologie 1995;27:75-90.

Woolston JL, Rosenthal SL, Riddle MA, Sparrow SS, Cicchetti D, Zimmerman LD. Childhood comorbidity of anxiety/affective disorders and behavior disorders. J Am Acad Child Adolesc Psychiatry 1989;28:707-713.

Zigler E, Styfco SJ. Is the Perry Preschool better than Head Start? Yes and no. Early Childhood Research Quarterly 1994;9:269-287.

Zoccolillo M. Co-occurrence of conduct disorder and its adult outcomes with depressive and anxiety disorders: A review. J Am Acad Child Adolesc Psychiatry 1992;31:547-556.

13. ERRATA

Study IV, page 239, heading: The selection process:
Correction: The regression analysis (Table V) showed that *female* (not male) gender improved access to remedial instruction.